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Original Articles

GAS CYSTS OF THE INTESTINE.*

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BALTIMORE.

THE AUTHOR'S CASE.

Patient.—The subject of this paper is a man, aged 60 years, a resident of Illinois, who was referred to me by his son, a physician. He entered the Union Protestant Infirmary on Nov. 28, 1907, with a diagnosis of cancer of the stomach.

History.—His history in brief was that he had always been a man who had enjoyed remarkable health up to about eighteen months ago when he began to have symptoms of indigestion. At that time he weighed something over three hundred pounds, had an excellent appetite and had always been a very hearty eater. During his illness, he had lost almost one-half of his body weight, and at the time he entered the hospital, he was emaciated and cachectic to a marked degree.

Examination.—This was negative except as referred to the abdomen. Here a mass in the region of the pylorus could be both seen and felt. It was hard and nodular. The stomach was enormously dilated, and contained the remains of food eaten several days previously. Examination of the stomach contents was typical of carcinoma, which his whole appearance strongly suggested. It was decided to perform a gastroenterostomy in the hope of giving him temporary relief. His very weak condition rendered doubtful the outcome of any operative procedure. A very unfavorable prognosis was therefore given.

Operation.—Dec. 4, 1907, under ether anesthesia, an incision was made through the right rectus muscle. A carcinomatous mass the size of an orange was found, involving the whole pyloric one-third of the stomach. Nodules of various sizes were found in the liver. The retroperitoneal lymph glands were enlarged and invaded by the carcinomatous process. A no-loop posterior gastroenterostomy was performed. Before closing the abdomen, the hand was passed into the pelvis, as a matter of routine. A curious, soft multilocular cystic tumor, 15 cm. (6 in.) long by 8 cm. (3¼ in.) wide at its widest point, was found attached to the free border of a loop of ileum about one foot above the ileocecal valve. No similar growths were observed elsewhere in the abdomen. From the peculiar cystic appearance of the mass, it was for a moment thought to be a beginning echinococcus cyst. On further examination, however, it was discovered that the cysts contained only gas. The cysts, of which there were a great many, were massed together like soap bubbles, in a basin of suds, being irregular in shape on account of the pressure of the neighboring cysts. The cysts themselves varied in size from microscopic, to as large as grapes. Each cyst seemed to have a thin, fibrous tissue wall of its own. Here and there hemorrhages could be seen in the fibrous tissue stroma. When the cyst walls were punctured, the air escaped with an audible hiss or pop, showing that it was under considerable pressure. The cystic growth was most prominent on the free border of the intestine, but completely surrounded the affected loop, extending here and there in scattered groups on both sides of the mesentery, for a distance of from 2 to 3 cm. (¾ to 1¼ in.) from its intestinal attachment. Some of the cysts were pedunculated. A single cyst or group of them might be attached by a single pedicle. The whole tumor mass was covered here and there by a thin, web-like fibrous structure which suggested an old fibrinous peritoneal exudate that had become partially organized. There were no adhesions between the tumor and the surrounding structures. Portions of the mass were removed for further examination.

The condition of the patient was so critical that excision of the affected loop of the intestine was not to be considered, indeed, it did not appear to be indicated. I cannot report, therefore, as to the mucous surface of the intestine, but there was no evidence that the lumen of the bowel had been at all encroached on. The patient rallied unexpectedly well from the operation. He made an uneventful recovery, and at the time he left the hospital, was gaining weight at the rate of a pound a day. Up to the last report he has continued in excellent health.

On again going carefully over the clinical history of the patient after the operation, there were no symptoms which could in any way be referred to this peculiar cystic growth of the intestine. His history had from the beginning suggested cancer of the pylorus, and the findings at the operation fully corroborated this diagnosis. The discovery of the gaseous tumor was purely accidental. The tumor itself, however, presents so many interesting features that it seems worthy of being made the subject of a full report.

HISTORICAL CONSIDERATIONS.

On looking up the record of similar growths, I have been unable to find any mention whatsoever of this tumor or anything that suggests it in the medical literature of this country. I believe, then, that this tumor is a unique specimen so far as America is concerned.

The first mention of the condition that I can find anywhere was in 1876, when Bang[1] reported an undoubted case. Following this report, Dr. B. M. Bernheim, whom I have to thank for valuable assistance in the preparation of this paper, has been able to collect from the literature reports of seventeen additional cases, making nineteen in all, up to and including my own case.

The chief interest in this peculiar growth lies in its etiology, and in the presence of circumscribed collections of gas in the tissues of the intestinal walls. It must be said at the outset that at the present time the specific etiologic factor or factors concerned in its production remain for the present undetermined. Light, however, may come from the direction of comparative pathology through the study of the same or a very similar growth which has been observed with considerable frequency in

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. Because of lack of space, the reports of cases are here abbreviated. The complete article appears in the Transactions of the Section and in the author's reprints.

1. Luftholdige Kyster i. vaggen af ileum og. i. nydannet Bindevav pa sammes serosa. Nord. med. Ark., 1876, viii, No. 18.

pigs and sheep, notably the former. Mayer[2] of Bonn was probably the first to call attention to the occurrence of cysts containing air in the intestine of pigs. Since then it has been repeatedly observed in the intestine of apparently otherwise healthy pigs, and among veterinarians has been known as "emphysema bullosum."

In medical literature it has been described under a number of different names, of which "Pneumatosis Cystoides Intestinorum Hominis" (Mayer) or "Gas Cysts of the Intestines" are perhaps the most satisfactory.

It is perhaps a matter of no little interest that this condition was described independently by John Hunter, and two specimens of the tumor taken by him from the intestine of the pig are preserved in the Museum of the Royal College of Surgeons. One of them is thus described: "A portion of the rectum of the hog of which the peritoneal coat is in many places, especially by the side of the mesorectum, covered by groups of thin-walled transparent membranous cysts, attached by pedicles, or having broader bases and containing air."

This specimen was referred to Hunter by Jenner and is described by him in the following words which give Hunter's ideas as to a possible explanation of the condition:

> That air is either formed from the blood or let loose by some action of the vessels both naturally and from disease, is an undeniable fact. We find air formed in fishes to answer natural purposes, for in those whose air bladders do not communicate externally (many of which there are) we must suppose it to have formed there. We also find it in animals after death, and I have a piece of the intestine of the hog which has a number of air bladders in it. Mr. Cavendish was so kind as to examine this air and he found it contained a little fixed air and the remainder not at all inflammable, and almost completely phlogisticated.

A specimen, as Mair[3] well remarks, with the history of which the names of Jenner, Cavendish and Hunter are associated is certainly one of no common interest.

Ostertag, Jaeger,[4] Dupraz[5] and others have described fully these air-containing cysts of the intestine as they are observed in the pig. Dupraz believes them to be a proliferating lymphangitis caused by bacteria, which, by their ability to produce gas, cause the formation of gas cysts in the course of the lymphatics. This organism he called *Coccus liquefaciens*, but the only proof he brings forward to substantiate his theory is that following subcutaneous injection of this organism into dogs and guinea-pigs, a resulting gas formation was observed. Numerous ecchymoses and erosions were produced in the mucosa of the intestine, which he considered as portals of entry for the organism. His experiments, however, were neither exact enough nor sufficiently numerous to be convincing or conclusive. Probably the best article dealing with the occurrence of this affection in animals is that by Jaeger which appeared in 1906. He discusses two main theories as to the etiology of the affection: 1. That the gas-containing cysts are caused by bacteria, and 2, that they are caused by purely mechanical and physical conditions. After reviewing Dupraz's work, he discusses the mechanical view as to the origin of these cysts. This is based on the claim that the gas in the cysts is composed mainly of oxygen, and that as yet no micro-organism has been found which produces oxygen, hence there can be no bacterial origin for the cysts. The advocates of this theory have thought that through the stagnation of the intestinal contents and the consequent gas formation, a number of slight abrasions have occurred in the mucosa through which the gas escaped into the tissues. Jaeger insists that the reason the gas in the cysts has always been found to be about the same as atmospheric air is that so much time has always elapsed between the time of the removal of the cysts from the body and that of the collecting and analysing the gaseous contents, that a two-way interchange has taken place between the external air and the cysts, through the cyst walls. The diffusibility of gases through animal tissues has long been known. Jaeger proved it to be true for the intestine of pigs; even such a short time as one hour making a considerable difference in the gaseous content of a loop of intestine filled with CO_2, O, H and N left suspended in the air. In three hours the H and CO_2 had completely escaped, and the portions of O and N were about the same as in the atmospheric air.

In four cases of gas cysts of the intestine of the pig studied by Jaeger, he found a bacillus of the colon family which produced gas in gelatine culture, which had no odor and was composed of 15 per cent. CO_2, 5.6 per cent. O, 77.3 per cent. H and 6.1 per cent. N. Jaeger followed up his observation by a number of injections of this bacillus into the intestinal walls of animals. Death followed in twenty-four hours by general infection, when there were found in all the layers of the gut a number of very small gas cysts. He called his organism *Bacterium coli lymphaticum aërogenes*. Jaeger's work, while most interesting and suggestive, is rather disappointing in that his animals died so promptly that the typical pathologic picture seen by other observers was not obtained in his experiments. It is only fair to add, however, that he explains this by saying that the disease in his experimental cases ran too acute a course to develop the picture of chronic pathologic changes noted in the other instances, namely, the giant cell formation, fibrous tissue, etc.

While this condition, as has been before mentioned, is observed with more or less frequency in the intestine of apparently otherwise healthy pigs, and is of no special economic value, still it is a matter of enough importance to have attracted the attention of the Bureau of Animal Industry of the Department of Agriculture in Washington. Dr. J. R. Mohler, chief of the pathologic division of this bureau, in a personal communication, writes me the following:

> The study of this quite common affection of hogs was taken up by the pathologic division during the past year in order to establish the cause of this peculiar condition, and if possible to confirm the work of Jaeger. While the affection is not of great importance from an economic standpoint, its occurrence in apparently healthy hogs, and the extensive cystic formations in the intestinal walls and on the mesentery, make it of great interest from a meat inspection standpoint. Numerous fresh specimens were received from several abattoirs, from which various culture media were inoculated. The pathologic histology was also carefully studied. A micro-organism belonging to the colon group was obtained from every case examined, and was found to be the etiologic factor of this process. The affection invariably restricts itself to the small intestine, and takes its origin in the mucous membranes. The cysts are always found in the course of the lymphatics, and there is a close association between these cysts and the lymph vessels. Histologically, the lymphatics principally

2. Jour. d. prakt. Heilk., 1825.
3. Gas-containing Cysts or Air-bladder Tumors, Med. Chronicle, March, 1908, 422.
4. Archiv. f. wissensch. u. prakt. Tierheilk., 1906, xxxii, 4, 5.
5. Arch. de méd. expér. et d'anat. path., ix; Revue méd. de la Suisse Romande; congr. internat. de gynec. à Genève, 1897.

manifest marked changes, and the picture is very striking. Masses of giant cells are found frequently obstructing the entire lymph vessel, and again they may form a uniform lining of the gas cysts. Their presence excludes the theory that the affection is of an acute character, and on the contrary, is indicative of a chronic condition. The experiments are still in progress and attempts to transmit the condition by the introduction of the isolated organism in various ways have not yet been concluded.

Although the experimental work just referred to has to do entirely with the appearance of gas-containing cysts of the intestine of the pig, in all probability it has a direct bearing on the condition as seen in man, and furthermore, while this communication has to do only with the occurrence of gas cysts in the intestine, still it might be well to call attention to the fact that for many years gas cysts have been known to exist in other portions of the body, particularly in the vagina and bladder of pregnant women. As early as 1899, Hahn,[6] in reporting his case of gas cysts of the human intestine, collected thirty-two observations on human beings, nearly all of them in the vagina and bladder of pregnant women. It appears mostly toward the end of pregnancy and usually disappears soon after delivery. It manifests itself in the appearance of numerous small dense cysts filled with gas and scattered over the vaginal surface.

Anyone interested in the different views as to the origin of these cysts and their clinical histologic characteristics we would refer to the monographs of Winckel,[7] Eppinger,[8] Schroeder,[9] Zweifel,[10] Chiari, Briesky and Kummel,[13] where they will find the subject fully treated, together with a complete bibliography.

Whether these two conditions are identical or even closely associated can not now be determined, but it is an interesting fact that in Eisenlohr's[14] case, gas cysts were found present in both the vagina and intestine.

ETIOLOGY.

In general, the ideas as to the etiology of this peculiar affection may be grouped under three headings: 1, That it is a new growth; 2, that it is of bacterial origin; 3, that the presence of the gas cysts is due entirely to mechanical causes. Among the adherents to the new growth idea may be mentioned especially Bang,[1] who in 1876 reported the first case, Mair[2] and Kouskow.[15] Their ideas as to the pathogenesis of the disease cover practically the whole ground. Thus, Bang[1] considered the cysts to be a new growth which, starting with the lymph cleft containing the giant cell, in turn grew and spread. The cyst was formed by the degeneration of its center, the contents being at first fluid and later on, by means not explained, gas. He considered the possibility of this gas being secreted from the blood, as in the air bladder of fishes, a suggestion which curiously enough had first been made by John Hunter in the case of the pig.

Mair[2] rejects the idea of an inflammatory or infective origin for the growth, as the histologic picture presented differs from that seen in either of these two conditions. He believes the tumor to be a true neoplasm, the cells of which have the power of secreting gas. He cites as analogous the activity manifested by the cells in the alveoli of the lungs in the exchange of gases, as shown by the work of Haldane and Lorraine Smith. In the air bladder of fishes, which he thinks this tumor resembles more than any other normal structure, gases are secreted from the blood. He believes that these gas containing cysts are analogous in structure and formation to the air bladder of fishes, as had already been suggested by Hunter and Bang.

The giant cells, he believes, are formed by division of the nuclei of the fibroblasts. In these gas bubbles appear, and gas accumulates around them under sufficient pressure to distend the tissues and form the thin-walled cysts observed. Kouskow[15] believes the tumor to be of congenital origin, and that it develops from the fixed elements of the connective tissue.

In favor of the bacterial origin of the disease are to be found Eisenlohr,[14] Hahn,[6] Winands,[16] Jaboulay[17] and others. All of these observers found bacteria in the tissues of the tumor removed, but there seems to be no uniformity in the particular variety of bacteria found. Cocci and bacilli showing different morphologic characteristics have been described by different observers. As against this idea, may be mentioned the fact that no specific organism has been discovered; that several observers have failed (my own case included) to find bacteria at all in the tissues of the tumor; and the entire absence of any evidence of inflammation. Among those who believe that a mechanical obstruction of some sort is the basis of this trouble may be mentioned Verebély.[18] He considered that the gas in the cysts came from the intestines by way of the tuberculous abscesses which were present in his case, in addition, and that the enlargement of the stomach which also was present, was partly responsible. He quotes Schmutzler as advocating the idea that the intestinal gases may penetrate into the subserous tissues when under strong pressure.

Mori[19] at first adhered to the idea of a bacterial origin of the growth, but after operating on the patient a second time on account of symptoms of intestinal obstruction, he found to his surprise that the cysts had entirely disappeared. On this account he was inclined to the view that the entire condition was due to circulatory disturbances. If these are relieved, as had been done in his case at the first operation, he believes the condition can be cured.

After carefully studying the conditions as found in my case, which will be presently related, and in the absence of evidence of bacteria either in the tissue or on culture, the most rational explanation of the growth would seem to be that it is a definite entity, a distinct variety of tumor, the cells of which have the faculty of secreting gas. Prof. William H. Welch, who very kindly examined secretions of the tumor, also inclines to this idea. The question as to just what rôle, if any, is played by bacteria in the etiology of this affection will have to be left for the present *sub judice*. Further evidence is necessary to explain conflicting reports. As favoring,

6. Ueber Pneumatosis cystoides intestinorum hominis und einen durch Laparotomie behandelten Fall. Deutsch. med. Wchnschr., 1899, xxv.
7. Arch. f. Gynäk., 1871, ii.
8. Ztschr. f. Heilk., Prague, 1880, i.
9. Arch. f. klin. Med., 1874, xiii.
10. Arch. f. Gynäk., 1877, xii; 1881, xviii; 1887, xxi.
13. Virchow's Arch. f. path. Anat., 1888, cxix.
14. Das Interstitiel Vaginal-Darm und Blasenemphysem. Zuruck fuhrt auf gasbildende Bakterien. Beitr. z. path. Anat. u. allg. Path., 1888, iii.
15. Gas Cyst of the Intestine, Boln. Gaz. Botkina (Russian), Oct. 7, 1891, 996 and 1029.
16. Ueber einen Fall von Gascysten in der Darmwand und in peritonitischen Pseudomembrane, Beitr. z. path. Anat. u. allg. Path., 1895, xvii.
17. Lyon Médical, 1901, xcvi, 753.
18. Pneumatosis cystoides intestin. Orvosi Hetil., 1901, xlv.
19. Ein Fall von Pneumatosis cystoides intestinorum hominis. Deutsch. Ztschr. f. Chir., 1907, lxxxviii.

however, the idea that the tumor is the result of some obstructive process, circulatory or otherwise, may be mentioned the fact that in practically every case so far reported, this particular tumor has been associated with disease of some portion of the intestinal canal producing a more or less complete obstruction to the lumen of the bowel. The usual form of obstruction has been a constricting ulcer either active or healed, at the pylorus. In two instances (Mori[19] and Kadyan[20]) the lesion was tuberculous. My case is the first in which the presence of cancer has been noted.

PATHOLOGY.

Of the pathology of the condition, one can not speak very definitely. The histologic findings, however, reported by different observers have presented a strikingly uniform picture. The main characteristics have been a more or less dense fibrous tissue framework, containing many round and spindle cells in various stages of development. In this fibrous tissue mass are to be seen clefts and spaces of varying sizes. These are not uniformly lined with endothelium, but here and there in their walls most observers have reported finding peculiar large giant cells containing many nuclei; as many as fifty to sixty have been reported. In and about these giant cells air spaces have been almost invariably found. Here and there also an apparently definite endothelial lining to the walls of the air cysts has been observed. These tumors as a rule are richly supplied with blood vessels, and some observers have reported the presence of hemorrhages into the tissue. This was quite pronounced in our case. Smooth muscle fiber and elastic tissue have also been reported as present in some cases. Analysis made of the air in the cysts shows it to resemble very closely atmospheric air. The tumor has been observed in all the layers of the intestinal walls. In the majority of instances, perhaps, it is more pronounced in the subserous tissue.

I am indebted to Dr. W. G. MacCallum of the pathologic department of the Johns Hopkins Hospital and to Dr. Charles E. Simon, pathologist to the Union Protestant Infirmary, for an examination of the tissues removed. The substance of their report is as follows:

PATHOLOGIC REPORT.

The specimen consists of a mass of rather soft tissue in which there are numerous cyst-like cavities filled with gas, sometimes under considerable pressure. On section, it is found to be composed of a loose fibrous tissue rather richly vascular, and surrounding spaces varying greatly in size, from microscopic to 1.5 cm. (⅝ in.) in diameter. While these spaces are not everywhere lined with endothelium, still here and there can be seen endothelial-like cells which at intervals have formed definite giant cells, containing many nuclei. In one place, in the midst of the fibrous tissue the cells are seen to be greatly swollen and vacuolated, with deeply stained nuclei. It may be questioned whether this is not the point of origin of a new cyst. In many places there are small groups of greatly swollen vacuolated cells in which the protoplasm seems to be blown up by bubbles of gas or globules of fluid. Such groups are usually round or oval. Where they are best developed they have the appearance of a network of protoplasm processes with scattered nuclei. Generally the groups are surrounded by concentrically arranged connective tissue, and in places muscle. Apparently they are really blood vessels. Indeed it is plainly seen in places that not only in cross but in longitudinal sections, blood vessels which show well developed elastic lamellæ are almost or completely occluded by the swelling of the endothelial cells, which balloon out to a great size, the flattened nucleus remaining in the middle. How circulation could have persisted with such extensive obstruction of the vessels is a problem. Not only the endothelium, but also the cells of the adventitia show the swelling or ballooning and there are numerous cells apparently belonging to the connective tissue which are similarly enlarged and filled with great vacuoles. This gives the whole tissue its very loose appearance. There are numerous mast cells scattered about and a few eosinophile cells. In some parts of the tissue there are so many of the vacuolated cells and the tissue is thus rendered so loose and soft looking that it is not difficult to imagine that this might be the method by which the cysts originated, but the nature of this vacuolization is far from clear.

No bacteria were found in the tissues in this case by either Dr. McCallum or Dr. Simon, nor did any growth take place in aërobic or anaërobic culture. The gas contained in the cysts was in such small amount that satisfactory analysis of it was not possible but it was odorless and did not burn. Numerous extravasations of blood into the tissues were to be seen.

Clinically, there is no definite characteristic picture that can be recognized, although Hahn[6] states that he believes he could recognize the condition again, and Stori[21] calls attention to a light crepitus which he felt on palpation of the abdomen. Certainly, in the majority of cases there are no symptoms that can be specifically referred to this condition, but in one or two instances (Kadyan[20] and Hahn[6]) it did seem as if the symptoms of abdominal pain and constipation complained of by the patient, could be partially at least accounted for by the presence of the tumor.

DIAGNOSIS.

The diagnosis, then, of this disease, is made usually at operation for some other trouble, or at autopsy.

TREATMENT.

Little can be said as to the treatment. The obstructive symptoms if sufficiently pronounced, would require first consideration, but these have been present in very few instances. In the majority of the cases that have been observed during life, it has been overshadowed by some other more important affection, the relief of which has been followed either by improvement or complete disappearance of this tumor. In Kadyan's[20] case, which was associated with tuberculous peritonitis and which necessitated opening the abdomen three times, at the last operation a number of gas cysts still remained, although most of them had disappeared. In Mori's[19] case, at the second operation, which was necessitated by abdominal pain due to adhesions, it was found that the cysts had entirely disappeared.

B. L. F. BANG'S CASE.

Macroscopic Examination.—At the autopsy performed on a woman, aged 57, who had died of volvulus, there were found numbers of air-filled cysts covering an area of about two feet of the ileum. They varied in size from a pea to a bean and were mostly in the muscular layer of the gut, which in their neighborhood was very much thickened, sometimes three times that of the normal. The serosa was everywhere covered with an old peritonitic membrane in which, over the affected part of the ileum, numerous air cysts were also found.

Microscopic Examination.—The cysts were lined by an endothelium whose cells were very large, often being thrown up into giant cells of thirty or forty nuclei, having a finely granulated protoplasm. The tissue around the cysts was very rich

20. Pneumatosis cystoides intestinorum hominis, Russk. Chir Arch., 1902, xviii, 1183.

21. Contributo allo studio delle cisti gassose dell, intestino umano. Clin. Med., Pisa, 1904.

in dilated blood vessels and lymph vessels, none of which were connected with the cysts. In some of these lymph clefts there were multinucleated giant cells similar to those found in the lining membrane of the large cysts.

WILHELM EISENLOHR'S CASE.

Examination.—At the autopsy, performed on a woman, aged 49, who had died of heart disease, numerous bullet-shaped cysts were found in the bowel wall near the ileocecal valve. Similar cysts were in the anterior wall and labia of the vagina. Those occurring in the intestine were found in the submucosa, muscularis and serosa and reached the size of a pea. Some of them communicated with each other and were connected with the surrounding lymph capillaries, which were very much dilated and had in their walls numerous giant cells which were at times connected with the endothelium. The same condition was present in the large cysts, which were lined with endothelium, the latter not being present in all of them. In some of the cysts, lymph vessels and dilated lymph capillaries, numbers of bacteria were found.

ANTONIO C. DE CAMARGO'S[22] CASE.

Macroscopic Examination.—At autopsy performed twenty-four hours after death on a man, aged 66, who had died of pulmonary tuberculosis, the cecum and ascending colon were found rigidly contracted for 30 cm. (12 in.). The intestinal wall was much thickened, slightly elastic and filled with numerous knobs which consisted of thickly pressed together cysts of different sizes. The contents was gas which had no odor. They were situated in the submucosa and the muscular layer, both of which were considerably hypertrophied, making the gut wall four or five times thicker than the normal.

Microscopic Examination.—The microscope showed that some of the cysts, which were as a rule round, communicated by atrophy of their walls. Sometimes, not always, an endothelial lining of large flat cells could be made out, in which occasionally large giant cells having fifty or more nuclei occurred. No connection could be traced between the surrounding vessels and the cysts. Clumps of small elongated bacteria, sometimes united end-to-end, similar to those found in Eisenlohr's case, were found in the walls and in the lumen of the cysts. No cultures were made.

KOUSKOW'S CASE.

History.—In 1891 a man, aged 57, died after having suffered for a number of years from symptoms of ulcer of the stomach and constipation.

Macroscopic Examination.—At the autopsy three loops of the small intestine were found matted together and involved in a tumor 10 cm. (4 in.) long by 5 cm. (2 in.) wide and 3 cm. (1¼ in.) thick. In addition to this, there were similar smaller tumors on two or three loops a little distance away. The surface of the tumor was translucent everywhere and irregular. Palpation gave the sense of a firm, dense and quite tense membrane, incision of which was followed by a noisy escape of gas showing that this membrane was the outer wall of numerous separate cystic cavities varying in shape and size, the largest being about 6 cm. (2¼ in.) in diameter. None of these cysts connected with any other, they contained nothing but gas and their walls were always dry and glistening. The inner wall was thin, light and more transparent than the other. One of these loops was twisted around the other two, partially obstructing them, thus causing the symptoms of obstruction from which the man suffered.

Microscopic Examination.—The tumors stood in intimate relation with the walls of the intestine and consisted of a multitude of cavities of varying size, of which the larger were situated in the center and toward the free surface, while the smaller were adjacent to the walls of the intestine or within their thickness. Each cyst had a definite wall made of connective tissue, inside of which there was a lining membrane composed of a compact layer of very flat giant cells of various shapes up to 1 mm. long, packed closely together and containing numerous, sometimes hundreds, of nuclei of round and slightly oval shape. The protoplasm was slightly granular and more or less pigmented. Numerous dilated blood vessels were found all around the cysts.

WINANDS' CASE.

History.—In May, 1890, a woman, aged 49, died in the Marburger Medical Clinic, who had suffered for a number of years from severe pain in the abdomen, constipation, which at times amounted to an obstruction and meteorism.

Macroscopic Examination.—At autopsy, performed forty-four hours after death, an old ulcer and dilatation of stomach were found, but in addition the greater part of the ileum and the ascending colon were found covered with innumerable translucent cysts, some of which were situated in a pseudo-membrane covering the bowel, the remains of an old peritonitis, and formed clusters like a bunch of grapes, while others were in the intestinal wall itself. The cysts were mostly on the convex surface of the bowel, varied in size from a pea to a cherry, and contained a gas which had no odor and did not burn.

Microscopic Examination.—The serosa generally was only a bit thickened. The mucous membrane was intact. The muscularis mucosa was, in the region of the cysts, very much hypertrophied. The submucosa was replaced mostly by a homogeneous-looking tissue, poor in nuclei, while in the region of the cysts, it was almost entirely absent. These (the cysts) lay both in the circular and longitudinal muscle which had undergone atrophy in their neighborhood, due to their gradual growth and the consequent pressure. Some cysts had become united through the partial atrophy of their walls. They had an endothelial lining for the most part, and a wall outside of this made of connective tissue. In their neighborhood numerous little hemorrhagic areas were seen. In some of the small, dilated lymph spaces large irregular giant cells having twenty to thirty nuclei (probably springing from the endothelium) were to be seen. Similar cells were also occasionally found in the walls of the larger cysts.

Numerous short bacilli of various sorts were present on the inner surface of the cysts, while only a few were in the neighboring tissues. Their form and arrangement, however, were not characteristic enough to separate them from the usual putrefactive organisms.

HAHN'S CASE.

History.—Man, aged 35, had suffered for two years from pain in the abdomen, accompanied by alternate diarrhea and constipation.

Examination.—On opening the abdomen, innumerable cysts were found scattered all over the intestine, large and small, some of which were pedicled, some flat on the serosa, from which alone they all sprang. They looked like echinococcus cysts, but contained a gas which did not burn. There was no tumor and the pylorus was patent, but the stomach and ascending colon were greatly dilated. Some of the cysts were removed entirely, others simply punctured, as many as possible being handled, and the abdomen was closed. The patient was able to have a good stool ten days later after an enema, and was discharged much improved, though not well. Six months later his condition was still fair, but he was troubled greatly by constipation. The cysts were on the convex side of the bowel and varied in size from a pea to a cherry. The intestinal musculature was atrophied. Cocci grew on culture, but it was impossible to determine their exact nature.

KORTE'S[23] CASE (DISCUSSION OF HAHN'S PAPER.)

History.—A woman, aged 62, was operated on in 1878 for an incarcerated crural hernia, and died seven days later with signs of peritonitis. At autopsy, performed very soon after death, the pylorus was found narrowed by the scar of an old ulcer, and the stomach was greatly dilated. The small intestine was irregularly contracted and narrowed in numerous places and contained in its walls cystic tumors varying in size from a pea to a cherry, which, when opened under water, set free bubbles of air. They were sharply outlined, the air

22. Recherches anatomiques sur l'emphysème spontane: Thèse inaug., Genève, 1891.

23. Deutsch. med. Wchnschr., 1899, xxii, 255.

could not be pressed hither and thither like an emphysema of the connective tissue. There was no inflammation in the neighborhood. The microscope showed the cysts to be in the submucosa, no endothelial lining could be made out.

WIKERHAUSER'S[24] CASE.

Macroscopic Examination.—During an operation on a man aged 35—a gastroenterostomy to relieve a dilated stomach, the result of stenosis of the pylorus following an old ulcer—the intestines were found covered with round grape-like bodies, varying in size from a millet seed to a small cherry.. They occurred singly on a small pedicle, or in larger or smaller aggregations, being usually on the side opposite to the mesentery, though in some places the intestine was completely surrounded. When touched with the fingers, they crepitated and when broken or punctured contained only air. After removing some of them for examination, the gastroenterostomy was finished and the abdomen was closed, but the patient died two weeks later of peritonitis. At the autopsy the viscera were so matted together that no trace of the cysts could be found.

Microscopic Examination.—Those removed showed that they were lined with an endothelium which in places was hypertrophic and two or three rows thick, while in others the cells had two or more nuclei.

MIWA'S[25] CASE.

History.—Male, aged 42, who had suffered for years from "stomach trouble" and tuberculosis of the lungs and spine. Diagnosis uncertain, but pylorus was thought to be stenosed. The patient's condition became steadily worse, death ensuing shortly after.

Examination—At the autopsy, nine hours later, numerous air cysts, varying in size from a hemp seed to a pigeon's egg, were found situated on a part of the ileum, having a length of 30 cm. (12 in.). They were placed very near and on top of each other and were in both the serosa and submucosa. They exploded on pressure with the finger. The lumen of the bowel was narrowed at their situation. The air in the cysts neither smelled nor burned.

TIBOR VERBÉLY'S CASE.

Macroscopic Examination.—At the autopsy performed on a man, aged 30, who had died of pulmonary tuberculosis, there were found, in addition to a dilated stomach due to an ulcer, on the lower ileum and cecum, numbers of rather flat cysts occurring singly or in groups, which contained an odorless and non-inflammable gas. A few, however, on being opened, discharged a solid yellow matter.

Microscopic Examination.—The cysts were found in all the layers of the intestine, mostly, however, in the submucosa. They were lined with endothelium and contained many giant cells, also cheesy masses in their walls. Numerous tuberculous abscesses were noted in the intestine. Bacterial examination negative.

JABOULAY'S CASE.

History.—Man, aged 50, who had suffered eight years from a greatly dilated stomach due to stricture of the pylorus from an ulcer. At operation, in addition to finding the pylorus stenosed by an old cicatrix, numbers of gas cysts, varying in size from a pin head to a small nut, were found covering the small intestine. There was also a sort of nest of them on the diaphragm at about its center. Nothing at all was done to the cysts, it being thought best to treat them like a tuberculous peritonitis, i. e., simply let them alone.

WILLIAM THORBURN'S[26] CASE.

Macroscopic Examination.—A woman, aged 42, was operated on for enormous dilatation of the stomach. A cicatrix was found near the pylorus, which, however, was patent. A thick band of adhesions, four inches long, was found constricting the stomach. During the removal of this there was found to the right of the great omentum a collection of rounded cystic masses, extending into the right hypochondrium. The numerous cysts varied in size from that of a pea to that of a walnut and were closely packed together. Each little cyst had a thin transparent but well-defined wall, they were separated only by a delicate fibrous tissue of greater tenuity than the omentum itself. Some contained a thin colorless fluid, rather more glutinous than serum, but the majority were filled with an odorless gas. The patient died about four weeks later with symptoms of a perforated ulcer of the stomach. No autopsy was obtained.

Microscopic Examination (made by W. Mair).—This showed that some of the cysts had an endothelial lining while others did not. Multinucleated giant cells were found both in the wall of the cysts and lying free in the lumen, also in some connective tissue nodules found in the supporting framework of the tumor mass.

NIGRISOLI'S[27] CASE.

Macroscopic Examination.—A man, aged 25, had suffered for some years from symptoms of ulcer of the stomach and intestinal obstruction and came to operation for their relief. On opening the abdomen, in addition to pyloric stenosis, a part of the small intestine about 60 to 70 cm. (24 to 30 in.) long was found to be covered with groups of fine shining cysts, resembling somewhat echinococcus cysts. Some of them were pedunculated and isolated, while others occurred in masses. Their size ranged from that of a pea to a small nut, sometimes they were round, sometimes oblong. On breaking them, a gas escaped, which had no odor and did not burn. They were most numerous along the insertion of the mesentery. Numerous dilated blood vessels ran all over them. After removing a few for examination, a gastroenterostomy was done by means of a Murphy button. The patient did well until about three weeks later, when the button ulcerated through the bowel, causing death by peritonitis. At the autopsy no trace of the cysts on the intestine or on the mesentery could be found.

Microscopic Examination.—The cysts showed that they had an endothelial lining, and a wall made of connective tissue.

KADYAN'S[28] CASE.

Macroscopic Examination.—A woman, aged 31, was operated on for tuberculous peritonitis. On opening the abdomen, the intestines were found covered by a mass of tubercles of varying sizes, among which were numerous vesicles, the dimensions of which ranged from a pin head to the size of a cherry. Some were suspended by pedicles. They were perfectly transparent, and all were filled with air, collapsing when punctured. The abdomen was closed without anything being done. The patient had suffered a great deal from ascites and constipation. The patient was better for a time, but as the ascites and constipation recurred with increasing severity, the abdomen was again opened about three weeks after the first operation. The picture as regards the cysts was approximately the same as at the first operation, but the tubercles had entirely disappeared. After puncturing and mashing some of the cysts, therefore, and after removing those suspended on pedicles, the abdomen was again closed. Two months later, that is, on Feb. 19, 1894, as the patient's condition again got worse, a third laparotomy was done. The small intestines were covered with air cysts of all possible dimensions, from a pin head to the size of a cherry or larger. Many of them were pedunculated. On pressure they burst, but, as before, contained only air. The tubercles were still absent, being replaced by whitish spots. The patient recovered from the operation, and at her discharge, although there was still distention and fluid in the abdomen, the pain and constipation had been relieved.

Microscopic Examination.—This showed the cysts to have a fibrous wall, which was lined by one or several layers of large round cells of the endothelial type.

24. Pneumatosis cystoides intestinorum hominis. Hahn. Liec. viestnik u. Zagrebu., 1900, xxii.

25. Ueber einen Fall von Pneumatosis cystoides intestinorum hominis nach Prof. Dr. Hahn. Centralbl. f. Chir., 1901, xvi, 427.

26. Gastric Ulcers; Perigastric Adhesions; Enormous Dilatation of the Stomach; Gas-containing Cysts in the Omentum: Med. Chronicle, 1902-3, iv, 256.

27. Sulle cisti gassose dell' intestino umano. N. Raccoglitore med., Imola, 1902.

T. STORI'S[27] CASES.

CASE 1.—*History.*—While doing a gastroenterostomy on a woman, aged 38, for stenosis of the pylorus and dilatation of the stomach, a round mass, looking like insufflated lung tissue, and about the size of a nut, was found lying above the gastrohepatic ligament. It was made up of many round cysts ranging in size from a pin head to a bean, the walls of which were thin and transparent. They contained a gas which had no odor and did not burn. No other similar growths were to be found. After removing a portion of the mass for examination, the gastroenterostomy was finished and the abdomen closed. The patient made a good recovery.

CASE 2.—*Macroscopic Examination.*—A man, aged 30, had suffered for some years from pain in the abdomen, especially after meals, vomiting and had lost weight. On examination the stomach was found greatly dilated, and in the right inferior portion of the abdomen a crepitus, similar to that present in a localized peritonitis, was obtained on pressure. A diagnosis of stenosis of the pylorus was made. After performing a gastroenterostomy, it was found that about a meter (39 in.) of the ileum near the cecum was surrounded by a gray mass, lobulated and soft, like insufflated lung tissue. It arose from the mesentery and some of the lobules were pedunculated, while others were not. The lobules had very thin walls, were transparent, ranged in size from a pin head to a small nut and contained an odorless and non-inflammable gas. After removing a small portion for examination, the abdomen was closed, the patient making a good recovery.

Microscopic Examination.—The walls of the cysts were made up of connective tissue, inside of which was a layer of endothelial-like cells. Stori isolated from a fragment of the cyst of the second case a coccus, more like a diplococcus, which produced gas on lactose agar cultures. Animal experiments, however, were negative.

M. MORI'S[28] CASE.

History.—A man, aged 37, complained for eight years of a feeling of fulness in the stomach after eating, sour belching and very obstinate constipation. The abdomen was greatly distended and the stomach dilated, reaching as low as the symphysis. At operation the whole of the small intestine, except the upper part of the jejunum and the lower ileum, was covered with innumerable air cysts varying in size from that of a hemp seed to a walnut, occurring sometimes in the form of a bunch of grapes having a pedicle and sometimes singly.

Believing that this condition was partly responsible for the dilatation of the stomach and the patient's pain, Mori did an anastomosis between the two healthy parts of the bowel. He also did a gastroenterostomy, as the pylorus was drawn high up by adhesions which could not be broken down. The patient was discharged, much improved.

Microscopic Examination.—The cysts were situated almost entirely opposite to the mesenterial insertion. The muscle of the intestine was atrophied. The walls of the cysts were very thin and broke easily when pressed by the finger, setting free a gas which did not burn. There was no endothelial lining to the cysts. Numerous cocci and bacilli were found here and there, both in the lumen and the tissue round about.

Nine months after the above operation it became necessary for Mori to perform a second laparotomy on the patient because of pain in the abdomen and symptoms of obstruction due to adhesions. To his surprise, there was not a sign of a cyst to be seen on any part of the gut.

W. MAIR'S[28] CASE.

History.—During a gastroenterostomy for pyloric stenosis on a young man, 23 cm. (9 in.) of the small intestine were found involved in a tumor mass made up of cysts and were resected. The tumor had given no symptoms. The patient recovered.

Macroscopic Examination.—The specimen consisted of a lobulated mass of gas-containing cysts, the smallest being barely visible, the largest about the size of a walnut. With the exception of a very few small ones close to the bowel, the mesentery was not involved, most of them being situated opposite to the mesenteric attachment. The cysts did not communicate. Some contained a small amount of fluid, but most of them, when punctured collapsed with the escape of an odorless gas. Cultures on agar were sterile.

Microscopic Examination.—Some of the cysts had an endothelial lining. Multinucleated giant cells were found both in the wall of the cysts and lying free in the lumen. In addition, there were some connective tissue nodules in the supporting framework of the tumor mass. Fibrocytes were likewise found in places. Dilated blood capillaries and vessels surrounded the cysts.

GRONDAHL'S[28] CASE.

Macroscopic Examination.—At the autopsy of a man, aged 31, who had suffered for some years from symptoms of ulcer of the stomach, in addition to a constricting ulcer in the duodenum and an enormously dilated stomach, one meter (39 in.) of the ileum was found to be covered with innumerable cysts. These varied in size up to that of a bean, were situated close together and occurred sometimes singly, lying flat on the serosa, sometimes in groups and occasionally at the end of a long and thin pedicle. Numerous small hemorrhages were to be seen. On pressure the cysts burst and contained a gas that neither burned nor had an odor, and on analysis was very similar to atmospheric air. Only the free border of the bowel was involved, no cysts being on the mesentery itself.

Microscopic Examination.—The cysts occurred in the mucosa, submucosa and serosa and had, as a rule, an endothelial lining, and outside of this a wall of connective tissue poor in nuclei. By serial sections the author claimed to be able to distinguish the union of the lymph vessels with the cysts. In some collapsed cysts occurring in the submucosa, numbers of many nucleated giant cells were to be seen. No cultures were made. A Gram-positive organism was, however, found in the proliferating lymph vessels, but it was neither characteristic nor frequent enough to be of any value.

The cases of Durvenoy, Cloquet, Dupraz and Orlandi referred to by some authors as instances of this condition are, I believe, due to postmortem changes, the result of gas bacillus infection, except, perhaps, the case of Dupraz, which he himself refers to as a case of proliferative lymphangitis. The case of Marchiafava mentioned by Winands has to do with serous cysts only and does not belong here.

ABSTRACT OF DISCUSSION.

DR. WILLIAM H. WATHEN, Louisville, Ky.: All that we seem to know about this tumor is that it consists of increased connective-tissue growth in which are numerous loculi filled with air in the lower part of the ileum. It is not positively known whether this excessive growth is entirely of connective tissue. There can apparently be but three sources of gas in this tumor—bacteria tissue products or pressure forcing the gas from the bowel into the cyst. There is no definite condition that tells us which of these theories must be accepted. It seems that nearly every one of the few observed cases has been associated with a constriction of the intestine near the pylorus, obstructing the flow into the lower bowel, but in the lower animals that have been examined there was no such constriction. Hence the idea of assigning the constriction as a cause can not be tenable, for the reason that the anatomic structures of the gastrointestinal tract in the lower animal are practically identical with the anatomic structures of the human being. We have never been able to diagnosticate one of these tumors until an exploration was made for some other trouble or at a postmortem examination. Fortunately, it appears that these tumors are not a serious danger to human life. It is easy to understand that, in any condition in which there is an obstruction of the circulation in the bowel and an increased growth of connective tissue in the muscularis of the bowel or in the connective tissue of the peritoneum by pressure alone gas could be forced out into these loculi. On a similar hypothesis, where the same condition exists, gas might form by the passage of bacteria into these loculi, but the bacteriologic examinations have up to the present been so unsatisfac-

28. Deutsch. med. Wchnschr., 1908, p. 913.

tory and conflicting that we know but little about that. We should probably be more likely to find some variety of colon bacillus, because the condition is located in the lower ileum, though it seems that a few bacteriologists have asserted that they have found some cocci in these tumors.

DR. J. M. T. FINNEY, Baltimore: This tumor is very rare, the instance reported being the first that has been observed in this country. The chief interest centers in its etiology, and this will, for the present at any rate, have to remain unknown. Whether it is a tumor of distinct character or whether of bacterial or obstructive origin is as yet undetermined. Histologically the tumor is of great interest. The disease appears to be confined to no one locality, but is widely disseminated, cases having been reported from Norway, Russia, Japan, Italy, France, Germany and England, but only one or two cases from each country. If the tumor is of bacterial origin, and the bacteria giving rise to it are of the colon group which are so common, it would be interesting to know why it does not occur more frequently.

THE INOCULATION TREATMENT OF GONOCOCCUS VULVOVAGINITIS IN CHILDREN.*

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Gonococcus vulvovaginitis in little girls is a much dreaded disease, especially when it occurs as a hospital epidemic. Its obstinate nature and possibly serious consequences are too well known to need comment. All methods of treatment hitherto have been futile and we have had to be content to let the infection wear itself out.

The success of the inoculation method of treating certain forms of gonorrheal affections in the adult suggested the possibility that it might also be of value in the management of this form of vaginitis in little girls. Accordingly, during this last winter, we have been treating patients in our ward at the Cook County Hospital with injections of dead gonococci and studying the results. The main object of the study has been to determine whether or not this method of treatment would lessen the duration of the disease. Incidentally, observations[1] have been made on the opsonic index of children afflicted with this infection and on the effects of the inoculations on the index and vaginal discharge. The results of the study form the subject of this paper.

TECHNIC.

The estimation of the opsonic index has been done by the usual Wright method. The "pool" serum has been prepared from the blood of three healthy adults. The killed bacteria, prepared and standardized also by the Wright method, has been usually made from old strains of one organism. The dosage has, of course, been more or less a matter of guesswork; we have started with about fifteen millions, gone as high as one hundred and twenty millions for the oldest girls, and sixty or eighty millions for those about 5 years of age.

Forty-one patients in all have received the inoculations. Other therapeutic measures, douching, etc., have been omitted during injections. We have been able to treat continuously only eighteen patients. Of the others, most have been taken out of the hospital by their parents before treatment was completed; a few have died. A patient has been called "cured" when all discharge has ceased and when four successive bacteriologic examinations of smears taken from the vagina failed to show the specific organism, these tests covering a period of seven to fourteen days. We use the term "cure" advisedly, well knowing the tendency of this disease to recur, after long periods of apparent quiescence. In order to make our results as reliable as possible, we have attempted to follow up all our patients, but with little success. We have recent reports on only 9 of them, distributed as follows: Four in their homes, 3 in the hospital, 2 deaths. Of 13 patients followed to their homes, only 4 could be found. Three of these had positive smears on May 21, 1908, three weeks, 1 month and four and one-half months, respectively, after their discharge from the hospital. The fourth one had a negative smear on the same date, three months after discharge.

Three patients are now in the hospital for various reasons, having been free from vaginal discharge and gonococci two and one-half, three, and five and one-half months, respectively. Two died in the hospital twenty-one and twenty-five days, respectively, after the first of the four negative smears.

Thus, of 9 patients followed up, 6 have been found free from evidences of disease for periods ranging from three weeks to five and one-half months. Hamilton and Cooke had equally poor success in following their patients. They kept track of 7 patients for six or eight weeks; 3 only remained free from signs of disease, the other 4 relapsing within a week after leaving the hospital.

The causes for which the patients have been brought to the hospital have been varied. Three only were brought on account of a vaginal discharge which proved to be due to the gonococcus. Five others had such discharge at entrance, but came with the following diagnoses: One congenital dislocation of the hip, 1 typhoid, 1 malnutrition, 1 intestinal, and 1 tuberculous hip. The other 10 who developed the disease after admission came in with the following affections: Two pneumonia, 1 conjunctivitis, 3 tuberculous disease of joints or glands, 1 otitis media, 1 appendicitis, and 2 typhoid.

DURATION.

It being impossible to determine how long the disease had existed in those brought in with the infection, and equally impossible to determine whether its appearance after admission was a primary attack or a fresh exacerbation of an old, chronic process, we have not attempted to estimate the total duration of the disease. Our main object has been to see what, if any, effect the inoculations had on the course of the disease. We have, therefore, noted the time from the first injection up to the day of the first of four negative smears. This has been done in all but two cases; in these, two negative smears and an absence of discharge for eleven days has been accepted as evidence of "cure."

The duration of the hospital treatment of all cases ranged from two to eighty-four days. The duration of treatment in the cured cases ranged from two to seventy-seven days, and their average was twenty-three days. Among these, 3 developed contagious disease while un-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. This part of the work has been done in the Memorial Institute for Infectious Diseases.

der treatment; 2 varicella, 1 scarlet fever. This, of course, prolonged their stay in hospital, the time of these 3 cases being, respectively, thirty-eight, fifty and forty-nine days. Treatment was discontinued during their stay in the contagious ward. If these 3 cases be eliminated, it makes the average duration of the 16 remaining cases nineteen days.

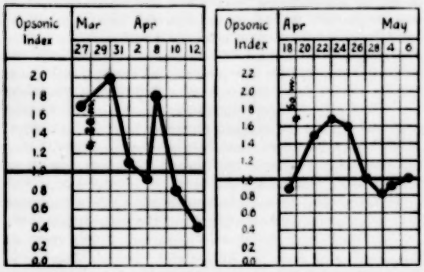

Chart 1. Case 1.—Alice W., 14 months. Vaginal discharge and gonococci disappeared within two days after first injection; there was high initial index and subnormal index at end. In all charts, inoculation is indicated by a star.

Chart 2. Case 2.—Annie D., 10 years. This patient had initial normal index with considerable discharge, no drop but quick moderate rise, then gradual fall to normal with cessation of disease. This was a mild case.

We have watched the effect of the injection on the vaginal discharge. It was not constant; sometimes a profuse discharge was lessened within a few days, sometimes increased, and still again, no effect was noted. It can not be said, then, that the injections had any immediate effect on the chief clinical symptom, and we can not look for any immediate result in this direction from an individual dose.

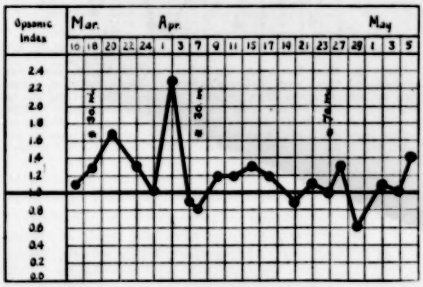

Chart 3. Case 3.—Frances V., 8 years. This was a mild but persistent case, with index, as a rule, high or normal. The second and third injections failed to cause as high a rise as the first. The patient was "cured" in forty-three days.

A comparison of our results with those of other observers would be of interest, but data on this method of treatment are naturally few. Two series of cases have been reported, however, both having been studied also in the wards of the Cook County Hospital, one by Butler and Long,[2] the other by Hamilton and Cooke.[3]

Butler and Long report twelve cases, but give no summary as to the average length of time under treatment nor any statement as to what they regard as a "cure." However, it is possible from the dates given in ten of the cases to estimate the duration, counting the time from the day of first injection up to the first of the two negative smears, which they evidently accepted as sufficient. On this basis the average duration of ten cases was forty-three days.

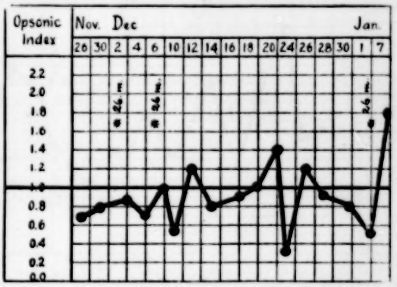

Chart 4. Case 4.—Ruth F., 4 years. This patient had otitis media and mitral endocarditis. The index was normal and there was profuse discharge. Attention is called to the slight drop, December 2, and equally slight rise even after two injections, also the increase in vaginal discharge from December 17 to 21, with a rising index, the great fluctuation without apparent cause, December 21 to 26, and finally, the marked effect of the third injection. The chart is discontinued from this point. There were four negative smears January 29-31. The patient developed scarlet fever February 1; died March 22.

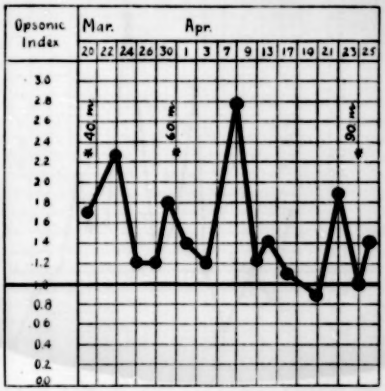

Chart 5. Case 5.—Rosie S., 6 years. This patient had an initial high index and profuse vaginal discharge. This was a persistent case with varying discharge, yet constantly high index. The patient left the hospital uncured after thirty-five days of treatment.

Drs. Hamilton and Cooke studied a large number of cases, mostly in the scarlet-fever ward. They are extremely conservative, and make no attempt to state the duration of their cases. They divided them into two groups of thirty each, inoculating all patients in one group and none in the other. They found that of the inoculated group, eighteen left the hospital free from discharge and gonococci, while of the uninoculated group only eight left in such improved condition, strong evidence in favor of the treatment and warranting their

2. Butler and Long: THE JOURNAL A. M. A., March 7, 1908, l., 744.
3. Hamilton and Cooke: Jour. Infect. Dis., 1908, v, 158.

opinion that inoculation apparently does shorten the period of the disease.

The discrepancy between the cases studied by Butler and Long and those studied by us is interesting, the duration being forty-three days in theirs, nineteen days in

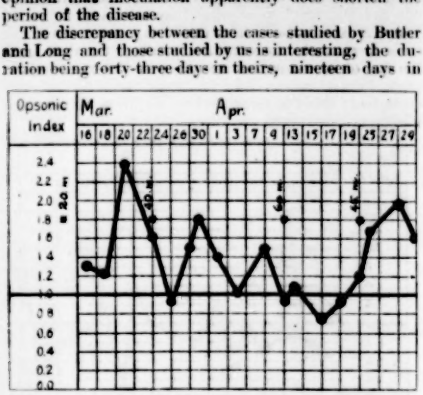

Chart 6. Case 6.—Josephine C., 6 years. Three injections of 32, 56 and 20 millions given, before taking index, on February 14 and 26 and March 13 respectively, probably account for fairly high, though falling index on March 16, and subsequent rise to a high point seven days after injection. Her case was an obstinate one; there was persistent profuse discharge, yet on the whole high index. The patient is still under treatment.

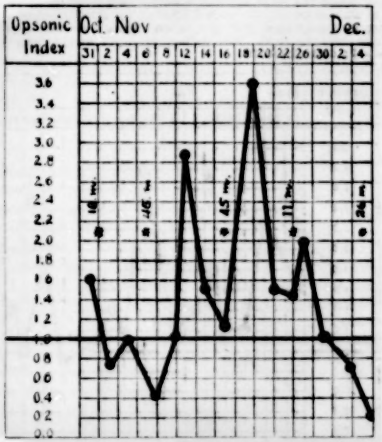

Chart 7. Case 7.—Eva St. C., 8 years. The patient had a high initial index even with much profuse discharge. There was a "double" drop after first and second injections followed by the rocket-like rise to an extreme degree; then another drop checked by a third injection and followed immediately by a still higher rise; then the negative phase and fluctuation; a fourth injection followed by a steady decline to an extremely low point, just before the development of scarlet fever. Did the incubative stage of this infection play any part in causing this persistent drop. Compare Chart 8 (varicella). The patient returned from contagious ward January 21 and received a few injections. The index was steadily low. She went home after eighty-four days of treatment without results.

ours. The children in the two series were drawn from the same class of society, were living in the same ward under exactly the same conditions as to general surroundings, food, nursing, etc. Obviously, the difference must be due to some detail of technic, by which we mean everything pertaining to the vaccine, preparation, age of culture, dosage, etc., of the bacteria used. Butler and Long used a young culture, six or eight hours old, taken, apparently, in most of their cases, from one strain. We used old cultures, likewise taken from one strain. The difference in the results of the two sets of cases probably lies in this factor, that is, the difference in age of the cultures from which the material injected was prepared. In this connection the investigations of Hamilton and Cooke are interesting and striking. They experimented with both old and new strains, with the following results: In five severe cases treated with fresh strains the average duration of the purulent discharge was twenty-four days; in twelve severe cases treated with old strains the average duration was fourteen days. It also may be noted that in their more chronic cases the average duration of the vaginal discharge was about three weeks, practically the same as in our own. The killed cocci used in our cases were prepared in the same laboratory as theirs and often from the same strain. We believe, then that the shorter duration of our cases as compared with those of Butler and Long, is due to the fact that our cultures were old ones, while theirs were fresh.

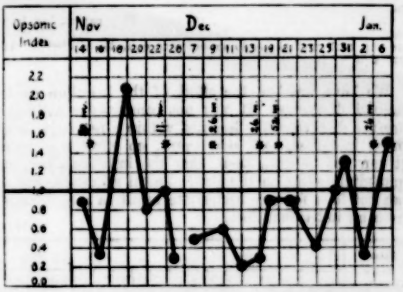

Chart 8. Case 8.—Annie K., 3 years. The initial index was normal, and there was profuse discharge. There was a drop and then an immediate rise after the first injection. The patient was in quarantine with varicella from November 22 to December 7. From the time of this infection the index did not rise, in spite of repeated injections until a month later. Was this persistently low index due to the varicella? Compare with Case 7, also a low index just before and after a contagious infection.

THE OPSONIC INDEX.

This has been taken in 17 cases, 10 of the cured, 7 of the uncured. Observations have been made on the index at the beginning of treatment, on its general course, on its relation to vaginal discharge and finally on its relation to injections.

The index at the beginning showed nothing characteristic. The children were in a more or less debilitated condition, and one might have expected to find the index as a rule low. Such, however, was not the case. The indices ranged as follows:

	Normal.	Below normal.	Above normal.	Average.
Cured	1 patient.	4 patients.	5 patients.	1.1
Not cured		3 patients.	4 patients.	1.2

Thus the index showed a tendency to range about normal in the cases taken as a whole. As between the cured and not cured, no difference is noted, the tendency to run at normal being just as marked in one group as in the other. The initial index, therefore, is of no

prognostic value, and gives no hint as to whether the case will clear up easily or be an obstinate one.

The general course of the index was as follows:

	Generally above normal.	Generally below normal.
Cured	6 patients.	4 patients.
Not cured	6 patients.	1 patient.

That is, with the progress of the disease, the index showed a tendency to run above, rather than below normal, and this tendency, somewhat curiously, is more manifest in the cases failing of a cure, six of these running above normal and only one below. In the cured cases, the index manifested a decided tendency to approach the normal toward the end of the infection.

The relation of index to vaginal discharge has been noted. There is a certain correspondence between them, at least in the latter part of the disease, the index manifesting a tendency to approach the normal with the disappearance of discharge and organisms. But individual observations from day to day by no means show this correspondence, and the index can not be inferred from the character of the discharge; that is, a high index was not always accompanied by a slight discharge, nor a low one with a profuse one. Thus out of 46 observations on this point in the cured cases, this correspondence was present 26 times; it was absent 20 times; and among the not cured cases it was present 13 times and absent 13 times. Obviously, then, we can not infer the index from the character of the discharge; obviously, also, the discharge alone can not be taken as a guide to time of injection if our object in giving an injection be to "raise" a falling index and thus, presumably, increase the individual's resistance to disease.

THE EFFECT OF INJECTIONS ON THE INDEX.

After the first injection there was almost invariably a drop in the index for a day or two, followed by a rise. Sometimes the drop was considerable, at other times not; likewise with the rise. Subsequent injections acted in a similar manner, sometimes producing a more marked rise than the first, sometimes less. There was nothing constant about this.

It would be desirable to know the average number of days elapsing between the date of injection and the date of the height of the positive phase, that is, the day on which the index begins to fall. This average, however, must be based on a large number of observations, and the data at present available are not sufficient to determine this point. When a sufficiently large number of observations have been made, and we thus can determine approximately how long the effect of the inoculation lasts, we may perhaps dispense with the index, and give the injections at stated intervals until the vaginal discharge and organisms have disappeared. Indeed, as far as our own limited observations go, they would seem to indicate even now that the index is not necessary, for the average time of those cases with an index was twenty-one days, that of those without index was eighteen days. In the latter group the character of the discharge or persistence of gonococci, or both, were the guides to injections. However, the number of our cases is so small, that on the general principles governing opsonic treatment, it seems desirable to continue to take the index, for the present at least.

The accompanying charts show the relation of the opsonic index to the injections and also to the vaginal discharge, and illustrate some of the points mentioned in the body of the paper.

SUMMARY.

The inoculation treatment of vulvovaginitis apparently shortens the stay of patients in hospital. Whether or not it actually lessens the total duration of the disease, as compared with other methods of treatment, future investigations must determine.

Old strains are more effective than fresh ones.

It is desirable, though apparently not absolutely necessary, to take the index while pursuing the treatment.

There is no correspondence between the index and the vaginal discharge.

Our thanks are due to our colleagues on the staff of Cook County Hospital, who kindly allowed us to inoculate their patients, and to the Visiting Nurses' Association for their help in tracing patients. We also are under special obligation to Dr. Hektoen and Dr. Hamilton for much valuable help and suggestion in the opsonic work.

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VACCINE AND SERUM TREATMENT OF GONORRHEA IN FEMALE CHILDREN.*

WILLIAM J. BUTLER, M.D., AND J. P. LONG, M.D.
CHICAGO. BIRMINGHAM, ALA.

A clinical experience of ten years with institution epidemics of gonorrhea, occurring at not infrequent intervals, has convinced us that gonorrhea in female children is quite as intractable to treatment as it is in women, though not apparently presenting the many complications seen in the latter. It is not the domain of this paper to consider the causes and prevention of the development of such epidemics, nor to take up the general therapy of gonorrhea in children, which in our experience has been most unsatisfactory.

It was with a full appreciation of the latter fact that we undertook to investigate the merits of vaccine therapy in this infection. Being somewhat encouraged by earlier work in this direction, we have carried our investigations to other cases. We have likewise broadened our work to include serum therapy for gonorrhea, and will mention below the results of its use.

In view of the numerous articles lately appearing on the immunity question, we feel that we can dispense with any discussion of the theoretic basis of vaccine and serum therapy and likewise the question of the advantages of one over the other. The claim of Wright that vaccine therapy affords a more rational mode of treatment in local infections than the local use of antiseptics, while strongly sustained by theoretic considerations, requires substantiation, by the attainment of convincing clinical results. However, it has been with a conviction of the advantages of reinforcing the forces of immunization as a local therapeutic measure over other methods of local treatment that we began this work.

In our first paper on the subject we confined ourselves to narrating the results obtained in the cases treated, without any effort at analyzing them, believing also the number insufficient to draw any broad conclusions beyond suggesting that vaccine therapy seemed to be a suitable method of treatment in gonorrhea. We might state in advance that we see no reason, after con-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

tinuing this method of treatment, to recede from that position.

We have treated throughout by vaccine, guided by the opsonic index, 25 cases, in female children varying in age from 1½ to 12 years. We have limited the number of cases taken under treatment in order that we might study the index closely in each individual case. The patient's index was taken every other day, with few exceptions, throughout the period they were under observation. Every dose of vaccine was administered and regulated according to the index. No local treatment was used in any of our cases.

Usually from one to several indices were taken before the inoculations were begun, in order to study the immunity wave during this time. Occasionally, an index will be found at or slightly above normal in chronic cases, but, as a rule, it is more or less below this point, and the fluctuations are usually of narrow range. In one such case with an index above normal, it dropped after vaccine injection below normal and remained so for several days, in spite of second and third injections, before it began to rise. This is sometimes observed in a case, in any event, until a proper dose for the patient is found, when the index will rise rapidly and clinical symptoms often respond accordingly (Chart 1).

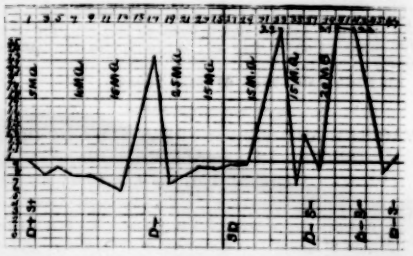

Chart 1. Showing slow response of index to vaccine injections until a sufficient dose is given, when index rises rapidly. Abbreviations: M = Million. G = Gonococcus vaccine. A = Gonococcus vaccine made from single cultures. B = Gonococcus vaccine made from cultures of several cases of gonorrhea. D + = Discharge present. D — = No discharge. S D = Slight discharge. P D = Profuse discharge. S + = Positive smear. S — = Negative smear.

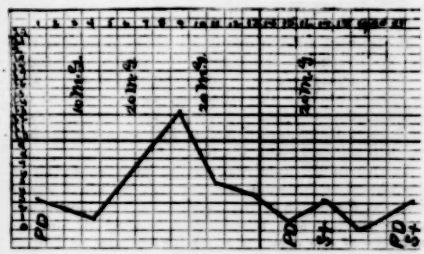

Chart 2. Showing slight reaction of organism in severe nutritional disturbances.

In the cases treated by us two stock vaccines were employed, one prepared from a single culture, and another from several different cultures. We did not make any effort to cultivate the gonococcus from individual cases, either in the first instance to confirm the diagnosis, or in the second instance to make autogenous vaccines. We relied on the stained smear for diagnosis and on the stock vaccine for inoculations.

The dose of vaccine tolerable to a patient seems to have rather broad limits. In the first part of our work we began with one or two million and increased according to the indications of the index. In the latter part of our work, while not neglecting the principle just mentioned, of the value of which we have been convinced as the result of experience, we ran the dose to one hundred million in order to watch the effect of larger doses. In only one instance did we note any general reaction on the part of the patient. One child of eleven years, after receiving a dose of fifty million dead gonococci, had several hours later, a decided general and local reaction, with rise of temperature to 103 F., rapid pulse, etc. At the site of inoculation, on the outer aspect of the right thigh, there was an intensely red area, the size of a silver dollar, with a prominent network of veins running upward from it. It was very sensitive on examination. This subsided in twenty-four hours, with the remarkable result that an exceedingly profuse and offensive vaginal discharge ceased in twenty-four hours and smears were negative. The discharge later recurred and has persisted. This was the only pronounced reaction we observed. The same child subsequently tolerated as large a dose without reaction.

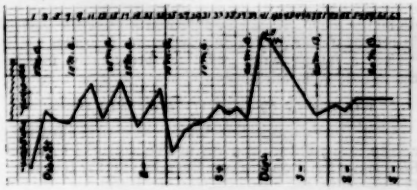

Chart 3.—Record of a patient apparently immune as the result of vaccine treatment.

While a constitutional reaction seldom occurs, a local or stick reaction is almost the rule, not only in cases of gonococcus infection, but also in other cases of infections that are inoculated with the corresponding vaccine. The local reaction consists of an indurated, tender area at the site of inoculation, appearing in the first or second twenty-four hours. This varies in size, depending on the amount of vaccine used, from that of a dime to that of a silver dollar, or even larger. In the latter case the overlying skin may become red, presenting in some instances the appearance of a burn. These reactions correspond to the subcutaneous or stick tuberculin reaction. Vaccines might be used in this manner as a diagnostic recourse in various infections.

In regard to the dose of vaccine in gonococcus infection in children, we would say that doses up to 100 million, except in rare instances, do not seem to cause any general reaction, and we are inclined to think that larger doses would not do so. The most potent dose, from a therapeutic standpoint, is that which shows the best response in the patient's index, as the clinical improvement in a pure gonococcus infection often runs parallel to the index. This dose may be small or large and can only be determined by a study of the index.

We believe that this point will influence much the results of vaccine treatment, which can not be attained when the dose is given haphazardly, both as to quantity

and time of administration. The time for inoculation is best determined by the fall in the immunity wave, as inoculation made at high tide often forces an index down, where it may remain two or three days or at least not rise to as high a point as at the time of inoculation.

Realizing, however, the impracticability of attempting to carry on extensive work in this direction, guided by a close index observation, which is only possible in specially equipped laboratories, with specially trained assistants, we would advise the use of vaccine therapy in cases, along lines that will be considered below. A slight experience in this direction revealed to us a wide difference in the results where the treatment is and is not controlled by the index.

In taking the index of patients for gonococcus it is our custom to compare the average phagocytic count of four healthy boys with that of the patients. It is desirable to take at least four cases for an average normal as the phagocytic count of healthy individuals may vary considerably. If the index is below normal, the indication for inoculation is, of course, given. As a rule, if the dose was a proper one, the index on the following day will show a rise, which may be slight or considerable. A gradual rise is usually maintained for a longer time than a very steep ascent, which latter may be followed by as sudden a drop. In either event, undulations may show in the immunity wave during the time it is responding to inoculation.

It is difficult to state how long a given dose of vaccine will maintain an index above normal, as this will often vary for the same dose, in the same patient. It is here that the value of controlling the injections of vaccine by the index impresses itself most, because a dose administered before the index has reached normal may hold it down for a few days. On an average, the inoculation requires repetition every fifth or sixth day, in our experience.

There seems to be no particular advantage in vaccine made up of mixed strains of gonococcus over that obtained from one strain. We have treated the greater number of our cases exclusively with a single strain of vaccine.

In taking up the cases treated we have divided them into acute and chronic, in so far as this is practical. The acute cases represent those that have come to us in the first few weeks of their infection. It is not always possible to draw the line clinically where the acute gonorrhea ends and the chronic begins. We have classed under chronic cases those that have apparently had their infection for several weeks or longer before they were received for treatment. The discharge in some of the latter cases may have continued for months as profuse and thick as it was in the first week of the attack. It is not improbable that local treatment has much to do with this. Actual improvement frequently follows interruption of the local treatment, without resort to any other measures.

We treated twelve acute cases. Nine of these recovered, judging from a complete cessation of discharge, and at least three or four negative smears, taken from the vaginal mucosa, at intervals of three or four days. These cases were under treatment on an average forty-three days. The three cases that did not recover averaged thirty-eight days of treatment.

There were thirteen chronic cases. Of these eleven recovered after a period of treatment averaging 39 days. We had at least ten other cases under treatment, but for too short a time to include in this work. One of these cases might merit special mention because it involved a child suffering from malnutrition. This patient died subsequently. The index was taken and inoculations made for a few weeks. At this time her general condition did not seem to contraindicate it. With one exception, when her index rose to 1.25 after inoculation, it remained below 0.7 throughout, notwithstanding repeated inoculations. This probably finds explanation in the slight reaction power of the organism in severe nutritional disturbances (Chart 2).

The acute cases while more intractable, apparently, than the chronic ones, show 73 per cent. of recoveries. The period of treatment averaged forty-three days, which is 10 per cent. longer time than that required for our chronic cases, 85 per cent. of which recovered. It is our custom to persist in the treatment until the result is accomplished or until we are convinced of its failure.

Patients who recover often remain from one to two weeks or longer in hospital after the discharge has disappeared because of the necessity for three or four negative smears before they are considered recovered, also because they can not always be disposed of at the end of the treatment. If allowance were made for this, the average period of treatment would be shortened.

In our first report on this subject we included a number of cases in which local treatment alone was used. The difference in results was so strikingly in favor of the vaccine therapy that we deem it unnecessary at this time to introduce further controls from this standpoint.

SERUM CASES.

We placed five cases, one acute and four chronic, on serum therapy. The acute case was kept on this treatment for seventy-two days, when the patient left the hospital still discharging and with positive smears. Of the chronic cases, one patient who had been under treatment 103 days, left the hospital with slight discharge, but with negative smears. Three other cases were under treatment without perceptible change in their condition for an average of eighty days. The serum used was prepared after the method used by Rogers and Torrey.

This comparatively small number of cases under serum therapy does not admit of much discussion as to its merit. However, the results were so uniformly negative that it may be said that in the cases treated, at least it proved valueless.

One of the serum cases was treated by serum for 83 days, when there was still considerable discharge, and the serum treatment was stopped. The patient was given 50 million dead gonococci on March 24, 1898. On March 23, the discharge had stopped. March 31, a smear from the vagina was negative. The absence of discharge was interrupted by the appearance of a slight discharge up to May 11, since which time she has had none and four smears were negative.

It might be urged that the length of time this patient was under treatment would be sufficient for the discharge to disappear of itself and the process to come to a standstill, but the reaction to the first dose of vaccine was so pronounced that we are inclined to accept it as further evidence of the efficiency of vaccine therapy in this infection.

Another recurring chronic case that showed no change with serum therapy after 81 days treatment, cleared up under vaccine in the course of a month.

We have already indicated what was meant by re-

covery in these cases, namely, that the discharge disappeared and that we had from three to four negative smears the last few weeks the patient was under observation. As to what the ultimate result in these children will be, we are not in a position to state, for after leaving the hospital, we have no means of keeping track of them. One patient has remained in the venereal ward several months after recovery without the discharge reappearing, and with constant reports of negative smears. She seems not only to have recovered, but, considering her environment, to have become immune (Chart 3).

CONCLUSIONS.

In summarizing the results of our work it appears to us that in the treatment of gonorrhea in female children, gonococcus vaccine is more effective than local applications, which we think in some instances actually delay recovery. The vaccine treatment is not only effective, but in many cases, more particularly those of some standing, produces very rapid improvement, and often recovery. This does not, however, hold good in all chronic cases, nor in all acute cases, many of which require a prolonged course of inoculations. This latter point should be held in mind by those undertaking this work.

The most effective dosage of vaccine varies for different cases and at different times for the same case. This will be best determined by the patient's opsonic index to gonococcus. We have found doses varying from 5 to 50 million very satisfactory. Where inoculations are practiced without the index in the quantities mentioned, they should be given every fifth or sixth day. Doses up to a hundred million may be used without causing any general reaction on the part of the patient, except in rare cases. The larger doses do not seem to have been more effective on the immunity wave or clinical condition, than smaller doses.

There seems to be no particular advantage in a vaccine made from several strains of gonococcus over that made from a single strain.

Our experience with the serum treatment in gonorrhea in female children does not warrant recommending it in such cases.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BUTLER AND LONG, AND CHURCHILL AND SOPER.

DR. ARTHUR W. FAIRBANKS, Boston: I wish to ask Dr. Butler if he obtained his standard by taking the average of the indices of five healthy children? Every one must appreciate the importance of this work, especially in dealing with this difficult problem in the crowded conditions of our large cities and in institutions. I am sure that we would all like to know something of the technic of making the cultures. When Dr. Butler's first paper appeared I had two cases in one family where there were other as yet uninfected children. On applying to the only man then doing opsonic work in my city, he said he did not know how to make the cultures and did not believe they could be made.

DR. R. B. GILBERT, Louisville: Does the doctor carry out any local treatment at the time of using the serum?

DR. D. E. ENGLISH, Millburn, N. J.: Does Dr. Butler base his injections on the opsonic index or on the clinical indications? How does he distinguish between relapses and reinfections?

DR. A. C. SOPER, Chicago: I will answer only the bacteriologic questions. The previous experience of Dr. Alice Hamilton was such that she came to the conclusion that it was not necessary to take the strain from the patient to be treated, but that any stock culture would do. Twice during the winter our stock culture was destroyed and we took the organism and cultivated it on blood-agar. It was easy to keep at 37° C.

DR. EDWIN E. GRAHAM, Philadelphia: I would like to ask Dr. Butler on what he bases the frequency of the vaccine treatment, whether on the discharge or on the opsonic index.

DR. C. F. WAHRER, Fort Madison, Iowa: Is such a serum or antitoxin now on the market and is it useful in acute as well as in chronic cases?

DR. W. J. BUTLER, Chicago: I think the differences in time of treatment noted by Drs. Churchill and Soper are apparent only and would disappear if we would assume the same basis of estimating the day on which we considered our patients recovered in a similar number of cases. In our first publication on this subject we omitted in our charts many notations as to discharge and smears in order to avoid confusion. In Wright's laboratory young cultures are employed. Accurate standardizing of old cultures of many organisms is impracticable. I have used young cultures for vaccines, which were administered only according to index. In some of these cases the infection is probably a mixed one. In these circumstances the clinical improvement could not be expected to follow closely the immunity wave for gonococcus, and likewise the period of treatment would be drawn out. There seems to be some misunderstanding as to the difference between gonococcus vaccine and gonococcus serum. Gonococcus vaccine consists of cultures of the organism suspended in salt solution that have been killed and standardized. Gonococcus serum is obtained from the blood of an animal that has been immunized against the gonococcus. My results with the serum in vulvovaginitis have been failures. I believe that the best results in treatment by vaccine will be obtained if it is guided by the index.

DR. F. S. CHURCHILL, Chicago: We suspended local treatment entirely in all my cases. In some cases we used the index as an indication for injection; in others we took the length of time the discharge persisted. If after a bacteriologic examination we got a negative result, we waited a number of days and did not make an injection unless we got a positive result. I had no complications. In regard to the comparison of Dr. Butler's cases and ours, the main thing of importance is the period of time. The standard we adopted was to take the time from the period of the first injection up to the day of the first of four negative smears. We did the same thing in Dr. Butler's cases, taking the time in ten cases. The average length of time was forty-three days. That was the average length of time in the cases reported by Dr. Butler to-day, whereas that of Dr. Soper and my own was only nineteen days. The only difference in technic is in the age of the cultures. Furthermore, there is the experience of Dr. Alice Hamilton, who found that those with the fresher strains took a longer time for the discharge to disappear than did those with the old strains. It seems to me that the comparison is in favor of the older strains.

DR. W. J. BUTLER: I used nothing else.

DR. F. S. CHURCHILL: But you say it is your custom to make a culture about six hours before you intend to use it.

DR. W. J. BUTLER: True, but it is from an old strain that we have had for weeks.

HYDROTHERAPY IN SCARLATINA.

WITH ESPECIAL REFERENCE TO THE TUB BATH AT NINETY DEGREES FOR EARLY NERVOUS SYMPTOMS.*

D. S. HANSON, M.D.

CLEVELAND.

During an epidemic of scarlet fever in Cleveland and vicinity a few years ago, having treated 69 cases with 13 deaths, while a neighboring physician (a student of mine) treated 72 cases with a mortality of 12, making a death rate of about 16 per cent., I felt that I had hardly

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

done my full duty to my patients and naturally studied for better methods of treatment, and after giving the full bath, in a manner to be described later, we were much gratified, both by the immediate and remote results, for sequelæ were conspicuous only by their absence.

In looking through the literature of this subject no reference is made to a systematic use of this method under definite rules. Such statements as "we use the bath frequently," "we commonly use the bath at a temperature of 90 to 95 F. in high temperatures," is about all that is said regarding the procedure.

In the recently published work by Pfaundler and Schlaussman, the statement is made that "we do not employ the baths therapeutically, but give one on admission for cleansing purposes, and four to six at the end of convalescence for disinfection. In the interim the children are simply washed." However, their English translators make amends by stating that "warm baths at a temperature of 90 to 95 F. to reduce temperature and quiet restlessness are extensively used in practice."

The temperature of the bath has much to do with the results obtained, a bath too hot or too cold predisposes to depression and collapse in these acute cases, but when the temperature is at 90 to 95 F. the bath can be prolonged indefinitely without fear of any untoward effects.

Kuhn calls the bath neutral when at a temperature of 92 to 94 F. because at that temperature water is neither absorbed nor eliminated, while when the temperature of the water is higher, water is eliminated through the skin, and when lower the water is absorbed. Water being absorbed favors elimination by the kidneys, thereby, no doubt, contributing toward the avoidance of inflammatory changes of those organs later.

Absorption of water by the skin lessens nerve sensibility, as shown by the experiments of Kolliker, Hymen and Krebs, and the protection given to the central nervous system against reflex irritation by the neutral baths through its sedative influence can readily be demonstrated in this disease; furthermore, as the toxins are so largely located in the distended blood vessels of the skin, this absorption of water by this part of the body no doubt dilutes, neutralizes and eliminates it in no minor degree. Kellogg says, "the neutral bath is the most sedative of all hydriatic measures."

A bath at a temperature of 90 F. is accompanied by and followed with a decided lowering of the temperature of the skin, and greatly modifies heat production, and in order that the thermogenetic processes may not be interfered with seriously, it is necessary that the body be protected after coming out of the bath and not exposed to the atmosphere.

If a bath tub is at hand, the patient may be lowered into it lying on a sheet, and a rubber air pillow placed under the head is a convenience, but neither are a necessity, and my patients have invariably been bathed in an ordinary wash tub, such a luxury as a bath tub not being at hand.

I wish especially to emphasize the early use of the bath, for in these severe nervous cases changes go on very rapidly in the central nervous system. For example: I recently treated a case of cerebrospinal meningitis in which fibrin and pus were present in the cerebrospinal fluid within twenty-one hours from the beginning of the attack, and changes in the foudroyant type of scarlatina are often equally severe and rapid.

In the toxic type, with high fever, intense rash, great restlessness, often with double rash, rapid respiration and pulse, often beginning with convulsions and great mental depression, later often with cold extremities and cyanosis, even cases occur in which toxemia is intense, with little or no elevation of temperature, but with marked depression of the nervous system, manifested by delirium, somnolence, apathy or unconsciousness.

It is in the early stages of these severe toxic cases, where the happy effects of this line of treatment can most frequently be seen, although in cases with high temperature where these severe nervous symptoms are not present, the benefits to be obtained are nearly as striking and will do more good than any other single measure.

The method I have used with the most satisfaction is with the water at a temperature of 90 F., each bath lasting from five to ten minutes, with very gentle friction to the body surface while in the bath, the bath to be repeated sufficiently often to control temperature and symptoms. Sometimes it has been necessary to do this as often as every two or four hours for three or four days.

In the epidemic above referred to several cases were lost by not correctly interpreting the early symptoms in which this treatment would have doubtless been ideal had it been put into practice sufficiently early. For example:

CASE 1.—B., aged 17, a beautiful, vigorous, active girl, whose brother had just had a very severe attack, was greatly exhausted nursing him day and night, immediately prior to the time she became ill. I first saw her in the evening, temperature 101 F., slight pharyngitis and rash just beginning to appear, the case having the appearance of a mild attack. The following morning the rectal temperature was 106 F., patient pulseless and in collapse, death following in two or three hours.

CASE 2.—E. R., aged 4 years. I first visited him in the evening, his condition being very similar to that of Case 1, the case seemingly being a very mild one. The parents were ignorant, irresponsible people, unable to recognize any unfavorable changes, hence failed to call me when the boy grew rapidly worse in the night. He died in convulsions before my arrival the next morning. This would have been an ideal case for the bath, but again mild symptoms in the beginning offered false security, and were misleading.

I wish to report three cases each of a different type illustrative of what the bath used in this way will really do, also one of equal severity treated in an entirely different manner, showing that no single method of cure is the only procedure.

CASE 1.—E. W., aged 5 years. The case was ushered in by a convulsion, vomiting and diarrhea; the convulsion was immediately followed by somnolence and muttering delirium; temperature very high, and rash beginning to show on neck and chest. The bath was immediately given, and the child conversed intelligently with her father before being removed from the tub. The tubbing was continued as indicated by restlessness and elevation of temperature for three or four days, resulting in a good recovery and no sequelæ.

CASE 2.—E. H., aged 3½ years, seen the second day of an attack that was of apparently no great severity (rectal temperature not above 102 F. at any time) and rash well out, with a pharyngitis of moderate severity, kidneys normal. Her father telephoned that the child seemed disturbed mentally, that she did not seem to understand what was said to her, and was delirious. On my arrival, a half hour later, she was apathetic, muscles of face twitching, she could not be aroused from stupor and was constantly muttering. The bath had as happy an effect as in the last case, the nervous symptoms disappearing like magic. This case illustrates the benefit to be derived in nervous depression when not dependent on high temperature and must have produced such marked results in some way independent of its effects on the temperature.

The third case was treated by a neighboring physician, who had read a paper I had written on this subject, and followed the plan outlined in the treatment of a very severe case in which the rash appeared very late and was preceded by unusual and severe symptoms. The doctor wrote me as follows:

CASE 3.—April 17, 1899, I was called at 2 p. m. to see M. S., aged 6 years, who had been taken sick suddenly. She appeared in her normal health that morning. Her temperature was 104 F.; she was very restless and tossing over the bed. She had vomited several times. She was in a condition of stupor and it was very difficult to get her to answer my questions. Scarlet fever was suspected, although there were no throat symptoms, neither was there any rash to be seen. Vigorous treatment by drugs was instituted, and an early call was promised the next morning. Her condition next morning was worse every way. The temperature was 106 F.; the stupor was so profound that she could not be aroused in the least; water put into her mouth with a spoon was not swallowed, but ran out as in a cadaver. It was impossible to give medicine by the mouth. The throat was beginning to look red, but there was no sign of a rash. An unfavorable prognosis was given the parents, and the tub bath was recommended as the only treatment. The recommendation was accepted and the treatment immediately begun. A bath at the temperature of 90 F. was used, with plenty of cold water poured on the head while in the bath. The duration of the bath was fifteen minutes, and was continued every two hours day and night. There was no change the first day, except that the temperature was reduced to and held at 103 F. After twenty-four hours' bathing the condition of stupor was much improved. She was now conscious of her surroundings and resisted when put into the bath. She also drank water and a little milk.

A little medicine was given from now on, but the baths were yet continued day and night. By the fourth day the rash began to appear and was very profuse two or three days later. The throat symptoms were also very severe. The stupor and restlessness soon disappeared and the progress of the case was in every way satisfactory. There were no sequels of any kind, except five or six abscesses which developed during the period of convalescence. I can but repeat the doctor's words, "No other treatment that I know of would have given such results in so severe a case."

Pfaundler and Schlossman report the case of a child, 4 years of age. The history was as follows: In the evening sudden emesis and diarrhea; fever; rash next morning; numerous light green fetid stools containing mucus; afternoon, stupor, delirium; evening, sent to hospital as meningitis. Temperature 103.3 F.; pulse, 150; pronounced cyanosis of extremities, stupor, twitching of the muscles of face, strabismus, chewing movements, unequal innervation of the facial nerves, jactitations, hyperesthesia, conjunctivitis, small macular, bright red rash irregularly spread. Slight pharyngeal involvement, nose clear; 200 c.c. Moser serum given 24 hours after onset. During the night the irritative nervous symptoms vanished, temperature dropped; next day no fever, pulse 100, convalescence uncomplicated. Surely a result that compares favorably with any result heretofore obtained by any method of treatment, but unfortunately the use of this serum does not usually produce such striking results.

ABSTRACT OF DISCUSSION.

DR. R. B. GILBERT, Louisville, Ky.: The hydrotherapy treatment in scarlet fever has this objection: When one is dealing with a spoiled child, 5 or 6 years old, nervous and irritable, the attempt to put him into a hot bath may result in a fright. I do not think that the hot bath eliminates any of the toxic effects of the disease, but that the toxicity persists and the disease is self-limiting. In cases in which it is impracticable or not acceptable to the parents to plunge a child into a hot bath or to use all the water we wish, I have been in the habit of using high colon irrigation of normal salt solution, using a pint or a quart each day, or whenever the temperature goes beyond 103. I still use the old-fashioned method of inunction. It prevents, at least, the itching and irritability of the skin, and I have often seen it reduce the temperature.

DR. C. A. EARL, Desplaines, Ill.: I have been for eighteen years the attending physician at an institution where 500 boys are kept. In the treatment of all the infectious diseases, particularly of pneumonia, this is the only therapeutic agent employed in a vast majority of cases. While I do not maintain that baths lessen the duration or mortality, I do know that they conduce to the comfort of the patient. I have again and again seen a boy with a high fever made comfortable by a five to ten-minute bath in a tub full of lukewarm water.

DR. D. S. HANSON, Cleveland: I have no doubt the colonic flushings would be beneficial, but I have the idea that the child would have more objections to it than to the bath. I have never encountered any objection to the bath.

CHARACTER OF THE STOOLS, WITH REFERENCE TO THE INTESTINAL FINDINGS IN THE DIARRHEAL AFFECTIONS OF INFANTS.*

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One of the most important matters for the physician to determine when called to attend an infant suffering from a diarrheal disorder is the probable condition of the intestinal tract. Are the symptoms produced by a gastrointestinal intoxication with little or no alteration in the intestinal wall, is the mucosa of the bowel congested, infiltrated or thickened, or is there a definite loss of substance, ulceration? Moreover, if there is a lesion, what is its situation in the course of the alimentary canal? These are questions on the answer to which depends the intelligent treatment of the patient.

In the preparation of this paper the autopsy records of 100 fatal cases, covering a number of years, at the Thomas Wilson Sanitarium have been reviewed, and the actual condition of the small and large intestine noted in each case, together with the character of the stools as indicated in the clinical history.

It is customary at the sanitarium, every morning before clinical rounds, to inspect and describe the last stools from each baby, and to make a note of their character on the history sheet. In this way a large number of records are available which indicate the general gross appearance of the discharges. In this paper no use will be made of the results of microscopic examinations of the stools which were carried on in many instances, nor of the bacteriologic investigations, but attention is directed only to the macroscopic character of the discharges, as it is on inspection of this kind that the physician is called on to decide the intestinal condition. The chemistry of the stools, their reaction, the presence and nature of curds are also not discussed, as this would lead too far afield.

Detailed description of the dejecta is not necessary and would involve much repetition. The large majority of the patients were suffering from diarrhea, the number of stools varying from 6 to 30 in 24 hours. There was almost without exception an abnormal amount of

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

mucus in the movements, and they usually had a green or yellowish green color. The presence of and amount of three elements, mucus, blood and pus, in sufficient quantity to be noticed by the naked eye or the macroscopic absence of these materials, have been taken as offering the simplest indications as to the character of the stools. The contents of the dejecta in regard to these elements during the course of the disease as observed at the sanitarium, and occasionally, where the patient's description could be relied on, at the homes, have been tabulated in respect to the condition of the small and large bowel as discovered at autopsy.

Mucus.—The findings in respect to mucus are shown in Table 1.

TABLE 1.

Mucus.	Number of cases.	Small Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened or infiltrated mucosa.	Ulcerated mucosa.	Large Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened or infiltrated mucosa.	Ulcerated mucosa.
Absent	7	5	2	0	0	5	2	0	0
Moderate Amount	16	6	8	1	2	6	6	4	1
Large Amount	37	11	13	3	10	9	9	11	8
Most of stools mucus	40	5	15	8	12	4	9	16	11
	100	27	36	12	25	24	26	31	19

Table 1 indicates that when there is no excess of mucus in an infant's stool so as to be readily detected by the naked eye, it is quite certain that the baby has no thickening or ulceration along the intestinal tract and that the only alteration from normal at all likely to occur is a moderate amount of congestion. These changes, with or without small scattered areas of hemorrhage into the mucosa, are more frequent when a small quantity of mucus is present, although with stools of this character there may very rarely be infiltration and ulceration of the small bowel, and thickening of the mucosa of the colon.

As the amount of mucus becomes greater the proportion of cases having more serious involvement of the intestinal mucosa increases. Thus of the 37 cases in which mucus was present in large quantity, 13 had a thickened or ulcerated small bowel, and 19 the same condition of the large intestine, whereas in the 40 babies having stools nearly all mucus, one-half had serious lesions in the ileum and 27, or 67 per cent., either infiltration or ulceration of the large intestine. It is to be emphasized, however, that a mucus stool containing large quantities of mucus is quite consistent with an unaltered intestinal tract. The only inferences that can be properly drawn from a consideration of the mucus alone in diarrheal stools is that its absence or presence in small quantities practically precludes a serious intestinal lesion, and that when it is present in a larger quantity there may be such a lesion in about one-half of the cases, and that the alteration is somewhat more apt to involve the large than the small bowel.

Blood.—Table 2 represents the findings in respect to blood.

Blood was present macroscopically in the stools of 35 per cent. of the cases. In these infants the small intestine was pale or normal in but two instances, the large bowel normal in but one case. Thus the appearance of blood in the discharges indicates that there is a pathologic lesion in the intestinal mucosa. Moreover, the amount of blood in the stools often bears a definite relationship to the extent of the bowel change. The occasional presence of a fleck of blood is just as apt to occur with a congested small intestine as when it is the seat of a more severe lesion; whereas, as far as the large bowel is concerned, the occurrence of even a minute quantity of blood suggests a more serious alteration.

TABLE 2.

Blood.	Number of cases.	Small Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened or infiltrated mucosa.	Ulcerated mucosa.	Large Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened or infiltrated mucosa.	Ulcerated mucosa.
Absent	65	23	24	4	12	23	12	16	5
Occasional fleck	18	1	10	4	3	1	10	11	3
Frequent blood stain	11	1	1	4	5	0	1	4	6
Considerable a'nt. of blood	4	0	1	0	3	0	0	0	4
Hemorrhage	2	0	0	0	2	0	1	0	1
	100	27	36	12	25	24	26	31	19

Larger quantities of blood indicate, with but few exceptions, an infiltrated and roughened or an ulcerated mucosa, usually of both the small and large intestine. In the instances in which the amount was described as considerable or when there was definite hemorrhage, definite ulceration usually of both small and large bowel was found at autopsy. On the other hand, the large number of cases in which no blood was detected on careful naked eye inspection, where changes in the mucosa were found at autopsy, is notable. Thus, among the 65 cases in which no blood was present in the stools, the mucous membrane of the small intestine was thickened or ulcerated in 16 instances, and in five additional cases the large bowel was in like manner involved. Ulceration of the large intestine is less apt to escape detection than that of the small; thus, there were but 5 cases of ulcerated large bowel among the 65 instances showing no blood in the stools, whereas there were 12 cases among this number in which at autopsy there was some definite loss of substance in the small intestine.

One may infer, therefore, that the presence of macroscopic blood in the dejecta of infants passing diarrheal stools, indicates an infiltrated or ulcerated intestinal mucosa, less often simply congestion with or without hemorrhagic areas, but that the absence of blood to naked eye examination does not preclude the possibility of serious intestinal lesion. It is, perhaps, unnecessary to state that no case is included in this summary in which blood or pus in stools could have come from anal fissure, eczema of buttock or other external source.

Pus.—Our findings in respect to presence or absence of pus in the movements is shown in Table 3. Pus is more

TABLE 3.

Pus.	Number of cases.	Small Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened.	Ulcerated.	Large Intestine. Pale or normal.	Congested with or occasional hemorrhagic areas.	Thickened.	Ulcerated.
Absent	73	26	27	5	15	23	24	19	7
Occasional grayish stools	15	1	4	5	5	0	3	0	3
Frequent gray mucous stools	8	0	4	2	2	0	0	3	5
Large amount of purulent material	4	0	1	0	3	0	0	0	4
	100	27	36	12	25	23	27	31	19

difficult to detect with the naked eye than blood, and hence the failure to note its presence in 73 out of 100 cases is not surprising. The definite appearance of pus in sufficient quantity to be recognized macroscopically is significant, as the table indicates. Thus pus was described in connection with 27 cases. In but one of these was the small bowel found to be normal, and in this one the mucous membrane of the large bowel was infiltrated and thickened.

The intimate relationship between the presence of pus in the dejecta and the considerable involvement particularly of the large intestine is noteworthy. Thus, among the 27 cases in which some purulent material was present in the dejecta, in 12 the mucosa of the colon was thickened and rough, and in 12 others there was definite ulceration. All 4 cases in which the stools contained large amounts of purulent material were extensively ulcerated. In 20 cases no pus was noted in which at autopsy the small intestine was found to be infiltrated or ulcerated. In 6 additional cases similar changes in the large intestine gave rise to stools free from macroscopic pus. It is likely that most of the leucocytes accumulated in the intestinal lumen are soon disintegrated and so escape attention in the stools.

The absence, therefore, of purulent material in the dejecta of these infants does not indicate freedom from intestinal lesion, but, on the other hand, the presence of pus suggests that the intestinal mucosa is considerably involved.

In order to determine whether the age of the patient bore any relationship to the frequency and amount of blood and pus appearing in the dejecta, tables have been prepared in which the cases have been divided into various age periods as follows: (1) Up to one month; (2) from 2 to 3 months inclusive; (3) from 4 to 6 months inclusive; (4) from 7 to 12 months inclusive, and (5) those over 12 months.

TABLE 4.

BLOOD.

Age.	Total Cases.	Absent.	Occasional Fleck.	Frequent Blood Stain.	Considerable Amount.	Hemorrhage.	Per Cent. of Cases with Blood.
1 mo.	6	5	1	0	0	0	17
2 to 3 mo.	18	14	3	1	0	0	22
4 to 6 mo.	42	28	7	5	1	1	33
7 to 12 mo.	27	14	7	3	2	1	48
12 mo +	7	4	0	2	1	0	43
	100	65	18	11	4	2	

TABLE 5.

PUS.

Age.	Total cases.	Absent.	Occasional grayish stool.	Frequent gray stools.	Large amount of purulent material.	Percentage of cases with pus.
1 mo.	6	6	0	0	0	0
2 to 3 mo.	18	16	1	1	0	22
4 to 6 mo.	42	31	6	4	1	26
7 to 12 mo.	27	16	6	3	2	40
12 mo.	7	4	2	0	1	43
	100	73	15	8	4	

It would appear, therefore, that the presence of blood and pus is noted in a larger proportion of cases after the early months of infancy, and therefore the detection of these elements after the sixth month is a somewhat more reliable indication of the intestinal condition than it is earlier.

This deduction is further strengthened by a tabulation (Table 6) in the same age periods of the cases which showed no blood at any time in the stools but in which definite intestinal ulceration was found at autopsy.

TABLE 6.

1 mo.	2 out of 6	33 per cent.
2 to 3 mo.	4 out of 18	22 per cent.
4 to 6 mo.	6 out of 42	14 per cent.
7 to 12 mo.	3 out of 27	11 per cent.
12 mo.	1 out of 7	14 per cent.

The presence of blood and pus in the stools is affected also by the duration of the intestinal disease. This is indicated in tabulations (Tables 7 and 8) of the cases in regard to blood and pus according to the length of time in measured periods from the beginning of symptoms until the fatal termination.

TABLE 7.

BLOOD.

Duration of illness in days.	Total cases.	Absent.	Occasional fleck.	Frequent bloody stools.	Considerable amount.	Hemorrhage.	Per cent. with blood.
1 to 7	7	5	2	0	0	0	26
7 to 14	26	19	4	2	1	0	27
15 to 29	21	9	6	3	3	1	57
30 to 60	34	20	6	7	0	1	41
60	12	12	0	0	0	0	0
	100	65	18	4	4	2	

TABLE 8.

PUS.

Duration of illness in days.	Total cases.	Absent.	Occasional Gray Stool.	Frequent Gray Stool.	Large Amount Purulent Material.	Per Cent. with pus.
1 to 7	7	7	0	0	0	0
7 to 14	26	20	3	3	0	23
15 to 29	21	11	2	4	4	48
30 to 60	34	23	10	1	0	36
60	12	12	0	0	0	0
	100	73	15	8	4	

These tables suggest that blood infrequently and pus very rarely appear macroscopically in the diarrheal stools until after the first week of illness, that the proportion of cases having these elements in the dejecta increases up to the fourth week and then declines, and that the blood and pus are less often found after the second month. At this time, if the patient survives, it passes into the marantic type, in which the condition of the intestinal tract becomes of secondary importance to the profound changes in metabolism that have been set up in all the tissues of the body.

These tables suggest also that frequently blood and pus appear in the same case, often in the same stool. A closer examination shows that of 37 cases having blood or pus in the discharges, in 26 blood and pus were noted together, in 10 blood was present without pus, and in but one case pus was noted without blood.

A final summary has been made (Table 9) indicating the condition of the mucosa of the small and large intestines in the cases showing blood and pus, blood alone or pus alone, respectively.

TABLE 9.

	Normal.	Congested or Hem. Areas.	Thickened or Infiltrated.	Ulcerated	Per Cent. of Altered Intestine.
SMALL INTESTINE.					
Cases with blood and pus 26 cases.	1	9	6	10	58
Cases with blood alone... 10	1	3	3	3	60
Cases with pus alone.... 1	0	0	1	0	100
LARGE INTESTINE.					
Cases with blood and pus 26	0	3	11	12	90
Cases with blood alone... 10	1	2	5	2	7
Cases with pus alone.... 1	0	0	1	0	100

It may be concluded, therefore, that blood, and more especially blood and pus, appearing to the naked eye in

the stools of infants suffering from diarrheal disorder are usually significant of definite intestinal lesions.

SUMMARY.

1. Mucus is evident to the naked eye in a large percentage of diarrheal stools of infancy. Its absence renders the presence of serious intestinal lesion improbable. Mucus in large amounts may be found in the stools in all intestinal disorders, but the proportion of cases with extensive intestinal alteration is greater when the quantity of mucus is in considerable excess.

2. The appearance of blood in the diarrheal dejecta of infants suggests an alteration of the intestinal mucosa in proportion to the amount of blood present. On the other hand, extensive changes may occur in the bowel wall without the macroscopic presence of blood in the discharges.

3. In like manner the presence of pus in the diarrheal stools of infants indicates, according to its quantity, alteration in the mucosa, particularly in that of the large bowel. The failure, however, to detect pus in the stools with the naked eye does not preclude the possibility of extensive intestinal lesion.

4. Blood and pus are more frequently found in diarrheal movements in the middle half of infancy, and these elements at this time form a correspondingly more reliable index of the conditions of intestinal mucosa.

5. Blood and pus rarely appear in the diarrheal discharges of infants before the beginning of the second week of their illness. They are more frequently found from the third to the sixth or eighth week, and are usually absent after this period, when the illness, if it continues, may asume a marantic character.

6. Blood and pus are often found mingled in the same stool. Less often blood appears alone, and still less frequently is pus noted in the dejecta of infants who have not passed blood. The presence of these elements indicates the probability of thickening and infiltration or of ulceration of the mucosa of the small, but more certainly of the large intestine.

ABSTRACT OF DISCUSSION.

DR. J. A. WORK, Elkhart, Ind.: Dr. Knox has described a pathologic condition; the etiology of the condition was not mentioned. But there is a cause prior to this condition, and what we are most interested in is the cause, and how to avert the condition, when possible. When there is ulceration there is a fermentation and a decomposition of the contents of the bowel. What is the cause of this fermentation and decomposition? It is either the quality or quantity of the ingesta. Infant feeding is one of the most difficult problems we have to solve. If we can secure the proper food, pure, natural food—and as Dr. Knox has suggested, the mother's milk is the best food—the problem is not so hard. If the infant can not have this natural food, the next best thing at our command is pure cow's milk. If we have a healthy cow, we can have pure milk; if not, we can not have it. We should handle the milk as little as possible. The mother's milk is taken directly by the child. That is the natural feeding. Now, if we can take the milk directly from the cow to the child, that is the next best to natural feeding. My plan is to milk from the udder directly into a bottle containing enough for the child to take at a feeding, cork it at the stable, and have a bottle for each feeding; to place the bottles in a cool place until they are needed, and then to put the bottle required in warm water until the milk reaches the proper temperature. By using pure milk at proper intervals, the proper quantity taken slowly, the child will not have the conditions so well described.

DR. T. W. KILMER, New York: We usually do not hear enough in regard to the pathologic findings in these cases. A baby has a diarrhea and very few of us look at the stools and examine them for blood or mucus. We can determine much without a microscopic examination. The second important point is the fact that babies do die from diarrhea, with absolutely no pathologic condition in the intestine. We have been teaching that in New York, for quite a while; and it is hard to make students understand the fact that babies do die from diarrheal conditions with absolutely nothing the matter with their intestines. These babies are poisoned and that is all. I am glad that Dr. Knox brought out that point.

DR. C. G. KERLEY, New York: My experience in a great many autopsies on infants and young children dying with intestinal diseases has impressed on me the fact that the character of the stools furnishes us with very indifferent evidence as to the nature of the lesion within. I recall cases in which the ulceration extended through the mucous membrane and through to the peritoneal cost, but macroscopically, blood was not to be observed in the stools. In other cases I have seen quite an extensive hemorrhage occur in which the autopsy would show but a slight congestion of the intestinal mucous membrane. There is a class of cases of the membranous type that Dr. Knox does not mention. In membranous colitis we may have normal stools with a fatal result. The child will have a high temperature and die of autointoxication, yet at all times there will be an apparently normal stool.

DR. J. H. MASON KNOX, Baltimore: The cases forming the basis of this paper were 100 fatal cases coming to autopsy, selected over a period of five years, from the records of a sanitarium located about ten miles distant from Baltimore, for the treatment of intestinal diseases in infants. The children were all under 18 months of age, all had diarrhea, and the amount of mucus and blood and pus were as I have stated. In perhaps 20 per cent. of the cases the dysentery organism was present, but with one or two exceptions none were of the membranous type. We find that exceedingly rarely. I do not want to discuss the various types, but simply to take the findings from the inspection of the stools.

A NEW SIGN FOR THE DETECTION OF MALINGERING AND FUNCTIONAL PARESIS OF THE LOWER EXTREMITIES.

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In THE JOURNAL, Aug. 29, 1908, appeared an article by Dr. C. F. Hoover, Cleveland, with the above title. The sign is based on the following facts: If a normal individual, lying on a couch, in the dorsal position with legs extended, lifts one foot, the heel of the other foot always digs into the couch. This complemental opposition, as Hoover terms it, is felt by placing the hand under the tendo Achilles. In case of paralysis of one leg, due to a pathologic lesion, if the patient attempt to lift the paralyzed foot, there is the same complemental opposition and the heel of the sound side digs into the couch. If the patient lifts the sound foot the complemental opposition of the paralyzed limb will depend on its strength; there will be no movement whatever if that limb be completely paralyzed. Just the opposite takes place in case the paralysis of the leg is hysterical or simulated. If the patient be told to lift the paralyzed leg, or to make a great effort to do so, there will be no movement of the paralyzed limb (provided the paralyses seems to be complete) nor any complemental opposition of the sound one. If, however, the sound limb is lifted, complemental opposition is exhibited in the paralyzed limb and the heel digs into the couch.

This sign is certainly a valuable one. It seems surprising that, simple and easy to elicit as it is, it was not described long ago.

Anyone can quickly satisfy himself of the presence of this reaction in normal individuals. I wish here to report the results of the examination in two notable cases of paralysis.

The first case, one of great interest, is that of a young man, 20 years of age, who had a tumor of the pons. The first symptom to appear was paralysis of the left external rectus muscle, which was soon followed by paralysis of the right arm and leg, and in the course of three months, before the fatal termination, nearly every voluntary muscle of the body became paralyzed.

The examination for the sign under consideration was made on the patient at a time when the right leg was absolutely paralyzed, while the left one was apparently normal. When he lifted the left, the sound leg, there was not the least movement of the other; but when he was told to try to lift the paralyzed leg, while it did not move in the least, the heel of the other foot dug into the bed.

The second case is that of a married woman of 28, with hysterical hemiplegia. She had suffered for a number of years with pain in the abdomen, on account of which a year ago a cystic ovary was removed, and again a month ago an exploratory operation was made, and the appendix removed. Several weeks after the latter operation, when this patient was convalescent and feeling very well, another patient, who had just been operated on and on whom some blood could be seen, was brought into her room. The sight of blood had always affected the patient. She says she did not feel ill at the time but that one-half hour later she became suddenly blind (a transient condition), then the right arm and leg trembled greatly, and later were paralyzed.

I saw her four days subsequently. She presented a right hemiplegia and hemianesthesia. The right arm and leg were completely paralyzed, not the least movement being manifested. The face was not paralyzed. On the same side there was loss also of all qualities of sensation, tactile, pain, temperature and muscular sense. On the face and trunk the anesthesia extended exactly to the median line. There was blindness of the right eye, deafness of the right ear and loss of smell of the right nostril. The sense of taste was not carefully tested.

When this patient was told to lift the right, the paralyzed leg, or at least to make every effort to do so, there was no movement whatever either of that leg or of the other; but when she lifted the sound leg the heel of the paralyzed one dug into the bed.

My purpose in making this report is to speak of the mode of examination. I stated that when the second patient lifted the sound leg the heel of the paralyzed one always dug into the bed. Yet this movement was not very pronounced. In fact, it was so slight that I could not help questioning whether the movement of the right heel was not because the lifting of the sound leg shook the bed and mattress, or caused a movement of the trunk, which was transmitted to the paralyzed leg. Further examination quickly removed this doubt. When the hand was placed under the right thigh, just above the knee, and the sound leg was lifted, the biceps and semitendinosus and semimembranosus of the paralyzed leg were felt to contract forcibly. Further examinations have satisfied me that this mode of examination brings out this sign more clearly.

It would appear that in cases like the two I reported —one leg completely paralyzed, the other normal—this sign should positively determine whether the paralysis were due to a pathologic lesion, or were either hysterical or simulated.* But in case the affected limb is not completely paralyzed so that it not only has the power of movement but also shows some complemental opposition, even in hysterical cases, the sign must be of far less value. Here the question would be whether the complemental opposition is as strong as it should be, a question which would be difficult to answer and would often lead to error.

Hoover says in his article that the movements may be carried out in the reverse order; that if a normal person press one leg against the couch there will be a counter lifting force exhibited in the other. I tested for this sign in a number of instances, in both normal and paralyzed individuals, watching the movement of the foot on the counter-lifting side, but failed to observe any movement in nearly every instance. A number of other physicians told me that they also had failed in this test.

After my observations in the case of hysterical hemiplegia, I again made the test, observing the uncovered thigh, or feeling for contractions of the thigh muscles. I was now able to see evidence of this counter-lifting force in every case. Those examined were normal individuals and hemiplegics, who had some power in the paralyzed leg. Some movement could be seen in the thigh, and different muscles were felt to contract, the adductor longus, parts of the quadriceps, and even the flexors of the knees, the results not being alike in various individuals. This pressing the leg against the couch is not so simple an action as lifting the foot, and doubtless is somewhat differently executed by different individuals —that is, as to the group of muscles brought into play and the comparative force of their contractions. For this reason the manifestations in the counter-lifting force vary in different individuals. It may be that this sign, that of the counter-lifting force, will prove of special service in some cases.

PERFORATIVE APPENDICITIS COMPLICATING PREGNANCY.

WITH REPORT OF A SUCCESSFUL CASE.

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Experience corroborates the contention that perforative appendicitis is one of the most grave and, fortunately, one of the most infrequent complications of pregnancy with which the surgeon has to deal. That a dissemination of our present-day knowledge of the complication is needed is exemplified by the high mortality and the frequency with which the autopsy findings bring the first intimation of the true cause of the clinical picture. A sufficient number of cases of appendicitis complicating pregnancy has been reported to enable us to draw important conclusions for our future guidance. At present our object is to briefly present these findings and to report a successful case in point.

HISTORICAL DATA.

Hancock,[1] in 1848, reported the first clear case of appendicitis complicating pregnancy. Ten days after

*There is the possibility that a malingerer, familiar with the test, might inhibit the complemental opposition of the apparently paralyzed leg, but care on the part of the physician should ward off even this source of error.

1. Lancet, 1848, ii, 381.

a premature delivery Hancock incised a perityphlitic abscess. The patient recovered. In 1885 Korn,[2] and in 1888 Müller,[3] cited a case in which the autopsy showed death due to a perforated appendix. Wiggins,[4] in 1892, reported the first case in which the diagnosis was made and an operation advised at a time when the life of both mother and infant could have been saved. Unfortunately, the patient's friends refused the only hope. In 1894 Munde[5] tabulated the first successful American case. In the same year Hirst[6] reported a perforative case treated surgically before premature birth had occurred. The patient had general peritonitis. Patient went to term and was delivered of a living infant. Our active knowledge concerning appendicitis complicating pregnancy dates from Wiggins' monograph.

FREQUENCY OF CONDITION.

Up to the present time it has not been possible to estimate accurately the frequency of appendicitis during pregnancy, since many of the simple cases are not recognized, and many others are not reported. In 1902 Rosner found 22 cases of appendicitis in fifteen hundred pregnancies. In 1905 von Oordt stated that he had observed the complication in only three of the 10,000 pregnancies at the Rotterdam Maternity. In a thorough, painstaking review of the literature I have been able to collect 235 cases of appendicitis complicating pregnancy, labor and the puerperium. Of the 207 cases occurring during pregnancy, 103 were of the perforative or gangrenous, and 104 of the non-perforative variety. The seemingly greater frequency of the perforative form is partially explained by the fact that they are more often recognized than the non-perforative variety. I am confident that appendicitis complicates pregnancy with greater frequency than the reported cases would tend to lead us to believe.

ETIOLOGY.

The etiology of appendicitis complicating pregnancy differs very little, perhaps, from that of appendicitis in the non-pregnant. I believe that pregnancy does, at times, precipitate an acute exacerbation in those cases in which the appendix is bound down by dense adhesion, or contains a fecal concretion, or in which the mesentery of the appendix is abnormally short and pressed upon by the pregnant uterus. I can not reconcile myself to the thought that pregnancy predisposes to primary attacks of appendicitis. If pregnancy was a predisposing factor, many more cases would be reported than is at present the case.

PATHOLOGY.

I have been forcibly impressed with finding that in 75.7 per cent. of the cases the complication occurred after the third month of pregnancy. As previously stated, in more than 44.6 per cent. of the collected cases perforation occurred. McArthur[7] held that after the third month of gestation a portion of the wall of an appendiceal abscess is usually formed by a part of the right wall of the uterus. Waldeyer, Futh and others observed that the pregnant uterus pushes the cecum upward and backward, so that if appendicitis develops it is more dangerous in the later than in the earlier months of gestation. I have been surprised to find how rarely portal infection follows development of an appendiceal abscess. In one of Oidtman's[8] cases a subphrenic abscess developed after the opening of an ileo-inguinal abscess. In my own case a left femoral phlebitis developed four weeks after incising a large appendiceal abscess. Jewett's[9] patient recovered after the spontaneous evacuation of a quantity of very offensive pus by rectum. Hlawacek[10] and Semb[11] cited cases in which pus was found in the tubes and uterus at autopsy. Rostowzew[12] has mentioned that infection reaches the uterus in three ways:

1. Through the peritoneum in case of diffuse peritonitis.

2. Through the lymph and blood vessels in the appendiculo-ovarian ligament.

3. Through the adhesions between the abscess wall and the generative organs.

Heaton[13] held that abortion must occur in all cases where the pregnant uterus forms a part of the abscess wall. Koenig[14] found that when the uterus formed part of the wall of a periappendicular abscess, expulsion of the fetus and sudden contraction of the uterus is almost invariably followed by rupture of the abscess. Betts[15] cites a very interesting case, in which a pelvic mass obstructed the delivery of the infant. Cesarean section was performed, and the cause of the obstruction was found to be an appendicular abscess. Cases have been reported in which the dense adhesions between the uterus and appendicular tissues interfered with the normal contraction of the uterus.

SYMPTOMS.

In my case the clinical picture was not clouded by the pregnancy. The sudden onset, the fever, the character and site of the pain, the marked tenderness, the vomiting, and the picture in general differs very little from that of appendicitis in the non-pregnant.

DIAGNOSIS.

A careful consideration of the previous history and of the mode of onset of the present attack, combined with a thorough examination, will usually eliminate error. Webster has very fittingly said that before a diagnosis of appendicitis is made, we should bear in mind the possibility of ureteritis and pyelitis. Frankenthal found that blood in the urine could be due to an appendix in relation with the ureter.

In pyelitis the lumbar pain, the frequent micturition, the pus in the urine, the daily chill followed by high temperature, the marked tenderness in the region of the kidney and along the course of the ureter, and the absence of rigidity of the right rectus and point tenderness suffice to guide correctly. While preparing the monograph, I saw, in consultation, a case of pyelitis complicating pregnancy. The diagnosis was readily made by the attending physician, Dr. Niebruegge.

Vineburg thinks that in ruptured tubal gestation sac the pain is more paroxysmal and more severe than in appendicitis. My experience has been that the clinical

2. Centralbl. f. Gynäk., 1885, ix, 444.
3. Quoted by Bolje.
4. Med. Rec., 1892, xli, 169.
5. Med. Rec., New York, 1894, xlvi, 678; 1895, xlvii, 28 and 379.
6. Med. News, 1894, lxv, 667.
7. Am. Jour. Obst., 1895, xxxi, 181.
8. Centralbl. f. Gynäk., 1905, xxviii, 596.
9. Brooklyn Med. Jour., 1899, xiii, 356.
10. Monatschr. f. Geburtsh. u. Gynäk., 1897, vi, 327.
11. Centralbl. f. Gynäk., 1901, xxvi.
12. Med. Obozr., 1902, lvii, 9.
13. Brit. Med. Jour., 1905, i, 463.
14. Beitr. z. Geburtsh. u. Gynäk., Berlin, 1900, iii, 33; and Centralbl. f. Gynäk., 1900, xxiv, 1214.
15. Homeop. Jour. Obst., Gynec. and Pediat., 1903, xxv, 9.

PERFORATIVE APPENDICITIS COMPLICATING PREGNANCY.

	Author	Time	Prev. Attack	Operated	Appendix	Peritonitis	Aborted	Mortality	
								Infant	Mother
1	Hancock			Yes	Perf.	Local	No	D	R
2	Korn	6 mo.		No	Perf.	General	Before Oper.	D	D
3	Mueller	9 mo.		No	Perf.	General	Before Oper.	D	D
4	Wiggins	3 mo.		No	Perf.	General	No	D	D
5	Krafft	4 mo.	Yes	Yes	Perf.	Local	No	?	R
6	Munde	8 mo.	?	Yes	Perf.	Local	Before Oper.	D	R
7	Hirst	4½ mo.		Yes	Perf.	General	No	R	R
8	Munde	2 mo.		Yes	Perf.	Local	Before Oper.	D	D
9	Harrison	5 mo.		Yes	Perf.	Local	Before Oper.	D	R
10	Munde	5 mo.		Yes	Perf.			D	D
11	McArthur	4½ mo.	Yes	Yes	Perf.	Local	After Oper.	D	D
12	"	4½ mo.		Yes	Perf.	Local	Before Oper.	D	D
13	Abrahams	3 mo.		Yes	Perf.	Local		D	D
14	Penrose	2 mo.	Yes	Yes	Perf.	Local	No	R	R
15	Crutcher	2 mo.		Yes	Perf. and Gang.	Local	Before Oper.	D	D
16	Abbe	7 mo.		Yes	Perf.	General	No	R	R
17	Bal	3½ mo.		Yes	Perf.	Local	No	R	R
18	Lanyerme	3½ mo.		Yes	Perf.	Local	No	R	R
19	Le Gendre	2½ mo.	Yes	Yes	Perf.	Local	No	R	R
20	Kroenig	8 mo.	No	Yes	Perf.	General	After Oper.	D	D
21	Oppenheimer	7 mo.		Yes	Perf.	General	Before Oper.		D
22	Blawacek	9 mo.		No	Perf.	General	Before Oper.	R	D
23	Marx	7 mo.	Yes	Yes	Perf.	Local	After Oper.	D	R
24	"	4½ mo.		Yes	Perf.	Local	After Oper.	D	D
25	Budin	5 mo.		Yes	Perf.	General		D	D
26	Pinard	5 mo.		Yes	Perf.	General	After Oper.	D	D
27	Fraenkel	6 mo.	Yes	Yes	Perf.	Local	After Oper.	D	D
28	"	2 mo.		Yes	Perf.	Local	After Oper.	D	R
29	Maygrier	6 mo.		Yes	Perf.	General	After Oper.	D	D
30	Ferak & Schwartz	7½ mo.		Yes	Perf. and Gang.	General	After Oper.	R	D
31	Gordon	5 mo.		No	Perf. and Gang.	General	Before Oper.	D	D
32	Segond	5 mo.		Yes	Perf. and Gang.	General	After Oper.	D	D
33	Falk	6 mo.		Yes	Perf.	Local	No	D	R
34	Pinard	6 mo.		Yes	Gang.		After Oper.	D	R
35	"	5 mo.		Yes	Perf.	General	After Oper.	D	R
36	Koenig	5 mo.	Yes	No	Perf. and Gang.		Before Oper.	D	D
37	"	4½ mo.		Yes	Perf.	General	Before Oper.	D	D
38	"	6 mo.	Yes	Yes	Perf.	Local	Before Oper.	D	R
39	"	9 mo.	Yes	Yes	Perf.	General	Before Oper.	R	D
40	Hagapoff	8 mo.		Yes	Perf.	Local	No	R	R
41	H rgott	8 mo.		Yes	Perf.	General	Before Oper.		D
42	"	9 mo.		Yes	Perf.	Local	After Oper.	R	D
43	Semb	6 mo.	No	Yes	Perf.	General	After Oper.	D	D
44	"	5 mo.	Yes	Yes	Perf.		After Oper.	D	D
45	Lewis	4 mo.		Yes	Perf.	Local	o	R	R
46	Sonnenberg	5 mo.		Yes	Perf.	Local	After Oper.	D	R
47	B others	6 mo.		Yes	Perf. and Gang.	Local	Before Oper.	R	R
48	Do oghue	3½ mo.		Yes	Gang.	Local	No	R	R
49	K ll r.	2 mo.		Yes	Perf.	Local	After Oper.	D	R
50	Cacal o	6 mo.		Yes	Perf.	Local	No	R	R
51	Qui	8 mo.		Yes	Perf.				D
52	Betts	9 mo.	Yes	Yes	Perf. and Gang.	Local	Before Oper.	D	D
53	Rostovtsew	2 mo.		Yes	Perf.	Local	Before Oper.	D	R
54	"	8 mo.		Yes	Perf.	Local	No	R	R
55	"	1 mo.		Yes	Perf.	General	No	D	D
56	"	7 mo.		No	Perf.	General	No	D	D
57	"	8 mo.		Yes	Perf.	General	Before Oper.	R	D
58	"	3 mo.		Yes	Perf.	General	After Oper.	D	D
59	"	9 mo.		No	Perf.	General	Before Oper.	R	D
60	Rosner	4 mo.		Yes	Perf.		No	R	R
61	"	10 mo.		No	Perf.	General	Before Oper.		D
62	"	4 mo.		Yes	Perf.	General	After Oper.	D	D
63	"	8 mo.		No	Perf.	General		D	D
64	Ricketts	2 mo.		Yes	Gang.		After Oper.		R
65	Holmes	1 mo.		Yes	Gang.	General	No	R	R
66	Treves	9 mo.		Yes	Perf. and Gang.	General	No	R	R
67	Labhardt	3 mo.		Yes	Perf.	Local	Before Oper.	D	R
68	Lediard & Sedgwick	6 mo.		Yes	Perf.	Local	After Oper.	D	R
69	Thring	6 mo.	Yes	Yes	Gang.	Local	No	R	R
70	Tcherning	5½ m.		Yes	Perf.	General	No	D	D
71	"	2 mo.		Yes	Perf. and Gang.	General	After Oper.	D	D
72	"	6 mo.		Yes	Gang.	Local	After Oper.	D	R
73	Heaton	2 mo.		Yes	Perf.	Local	No	D	R
74	"	5 mo.		Yes	Perf.	General	Before Oper.	D	D
75	"	7 m.		Yes	Perf.	Local	Before Oper.	D	R
76	Mauclaire	4 mo.		Yes	Gang.	General	No	R	R
77	Sherping	5 mo.		Yes	Perf.	Local	After Oper.	D	R
78	McB rney	5 mo.		Yes	Perf.	Local	No	R	R
79	Sears	3 mo.		Yes	Gang.	Local	No	R	R
80	Freund	2 mo.		No	Perf.	Local	Before Oper.	D	D
81	Sonnenberg	4 mo.		Yes	Gang.		After Oper.	D	R
82	Hermes	5 mo.		Yes	Perf.	General	After Oper.	D	D
83	Oeltman	3 mo.	Yes	Yes	Perf.	Local	Before Oper.	D	R
84	Meurer	9 mo.		No	Perf.		No	D	D
85	Jung	5 mo.	Yes	Yes	Gang.	General	After Oper.	D	R
86	Shoemaker	5 mo.		Yes	Perf.	Local		D	D
87	"	5 mo.		Yes	Perf. and Gang.	Local	After Oper.	D	R
88	Tisser & Lemeland	9 mo.		Yes	Perf.	General	After Oper.	D	D
89	Roncaglia	3½ mo.		Yes	Gang.		After Oper.	D	R
90	"	1 mo.		Yes	Perf. and Gang.		Before Oper.	D	R
91	Stabler	24 wks.		Yes	Perf.		After Oper.	D	R
92	Linder	8 mo.		Yes	Perf.	General	After Oper.	D	D
93	"	8 mo.		Yes	Perf.	Local	Before Oper.	D	R
94	"	9 mo.		Yes	Perf.		Before Oper.	R	R
95	" (Webster's)	3 mo.		Yes	Perf. and Gang.	General	After Oper.	D	R
96	"	4 mo.		Yes	Gang.	Local	After Oper.	D	R
97	Lockyer	8 mo.		Yes	Perf.	Local	Before Oper.	R	R
98	"	7 mo.		Yes	Gang.	General	Before Oper.	R	D
99	von Rosthorn	8 mo.		No	Perf.	General	Before Oper.	R	D
100	"	4½ mo.		Yes	Perf. and Gang.	General	No	D	D
101	Cr ll	6 mo.		Yes	Perf.	Local	After Oper.	D	R
102	Cooke	8 mo.	Yes	Yes	Gang.		After Oper.	R	R
103	Bab er	6 mo.	Yes	Yes	Perf.	Local	After Oper.	D	R

picture and the findings on thorough examination suffice to guide to the seat of trouble.

When the symptoms of appendicitis appear during the puerperium, difficulty in reaching a correct diagnosis may be met. Pinard[16] has mentioned the fact that in septicemia a chill seldom appears before the third day after delivery, while in perforative appendicitis or in ruptured appendiceal abscess the patient may experience a chill on the day of the delivery or the following day. The character of the lochia, the previous history, the mode of onset, the muscular rigidity and the findings in general will suffice to guide to the appendix.

PROGNOSIS.

The mortality of appendicitis complicating pregnancy and the puerperium is the mortality of delay.

Delay until perforation has occurred means an infant mortality of 66 per cent. and a parent mortality of 48.5 per cent. Of the 103 perforative cases complicating pregnancy that I have collected, operation was performed in 89. Thirty-three aborted before, and 37 after operation; 36 mothers died. Of the 14 perforative cases treated medically, all the patients died; 10 aborted, and in 4 the child died in utero, a parent mortality of 100 per cent. and an infant mortality of 75 per cent. Of the 104 non-perforative cases, 50 patients were operated on; 7 aborted; one mother died. Of the 54 not operated on, 6 aborted and 4 mothers died. I found 28 cases of appendicitis complicating the first ten days of the puerperium; eighteen were perforative. In these 18 cases 12 patients were operated on, with a mortality of 33.3 per cent. Two of the 6 not operated on recovered by accident; the pus burrowed through the rectum. Nine cases were non-perforative. In these 3 patients were operated on and 6 were treated medically. All recovered. In one case (Michel's[17]) complicating the puerperium, full details are lacking. I have not collected the cases occurring after the tenth day of the puerperium, because I do not think they should be considered here.

TREATMENT.

Early, efficient surgical intervention is the secret of success in the treatment of appendicitis complicating pregnancy and the puerperium. If perforation has occurred, and if the abscess is localized, incision and free drainage should be immediately secured. The great danger of rupturing the abscess and flooding the peritoneal cavity with pus, if the uterus is emptied before operation, is so real that it demands consideration. Muret,[18] Koenig[14] and others have reported fatal cases in point. In my case delivery did not occur until 48 hours after the operation, thereby giving time for the formation of a protecting wall between the general peritoneal cavity and the gauze drains.

If the patient has general peritonitis, incision and drainage, without disturbing the gestation, are indicated, provided the pregnancy has not advanced beyond the fourth or fifth month. If the patient is at the end of gestation, *accouchement forcé*, followed by abdominal section for the securing of efficient drainage, are called for. The exaggerated Fowler posture and continuous saline infusion per rectum are of very great benefit in the postoperative treatment.

Cesarean section has been suggested for perforative cases with general peritonitis, if the patient is near the end of pregnancy. The subject needs more thorough consideration. We should at least be sure that the infant is alive, before we resort to Cesarean section. It seems to me that *accouchement forcé* or vaginal section, followed by abdominal incision and free drainage, offer the best results in these very distressing conditions. The surgeon must be guided by the individual case.

16. Ann. de gynéc., 1898, xlix, 345.
17. Rev. méd. de l'est, 1906, xxxvi, 257.
18. Quoted by Pinard.

REPORT OF CASE.

Patient.—Mrs. L. S., aged 29, was seen in consultation with Dr. Soliss of Sapulpa, Okla., to whom I am indebted for the following data:

Previous History. Family history was negative. Menses began at 12; always regular and free from pain. Married at 19. Mother of three healthy children. Has had five miscarriages. Last menses appeared in October, 1907. During the present gestation she had frequently been seized with sudden, more or less severe pain in the right, lower abdomen. During the past few months the pain had become more frequent and more severe.

Present Illness. On Sunday, April 26, 1908, shortly after having partaken of a substantial dinner, she was suddenly seized with an excruciating pain in the abdomen. It was so severe that she could not move. Gradually the pain shifted to the right side and became intermittent and cramp-like in character. On Monday morning she arose and got breakfast but would occasionally have to sit down on account of the pain in her right side. Monday night the excruciating pain returned and seemed localized in her right side. She vomited and felt hot. Early Tuesday morning Dr. Soliss was called. He found the patient in excruciating pain. There was marked tenderness over McBurney's point and the patient presented the usual clinical manifestations of a severe attack of acute appendicitis. Ice bags were applied to the right inguinal region and sedatives were administered to alleviate the intense suffering. Urinalysis showed absence of pus, blood, casts and albumin. Vaginal examination showed slight dilatation of cervix. Fetal heart sounds normal. A diagnosis of acute appendicitis was made. On Wednesday the condition of the patient being unchanged, and the symptoms continuing unabated, an operation was advised. Since the slightest exertion was followed by excruciating pain in the lower right quadrant of abdomen the patient hesitated to be moved. On Friday morning she decided to make the trip to St. Louis. While *en route*, the patient was restless and feverish. Dr. Soliss feared she might be confined on the train. I saw the patient with Dr. Soliss, Saturday afternoon, at the Deaconess Hospital, and readily confirmed his diagnosis. The history, the pain, the fever, the localized tenderness, the absence of pus, blood or casts in the urine, and the picture in general pointed to the appendix. The fetal heart sounds showed the infant in good condition. The cervix was somewhat dilated and softened.

Operation.—An incision was made over the area of dulness and about a quart of offensive pus evacuated. The wall of the uterus formed a part of the wall of the abscess. The appendix could be felt near the margin of the ribs in the right mammary line. It was curled on itself, perforated, contained a fecal concretion, and was so firmly adherent and up so high that I feared that undue manipulation would too greatly endanger the life of both patient and infant. The distal, free portion of the appendix was removed. Two rubber tubes were used to secure good drainage. Three small gauze drains were placed between the abdominal wall and the uterus, so that the general peritoneal cavity would be protected if premature delivery occurred. A figure-of-eight silkworm gut suture was placed in the upper and one in the lower angle of the incision as a precaution. The entire operation occupied possibly fifteen minutes. The patient required very little ether, and quickly recovered from same.

Postoperative History.—Two days after operation labor pains appeared and caused considerable anxiety. A hypodermic injection of ¼ grain of morphin sulphate was given. Five hours later a living, apparently six months old infant was born. The placenta was not readily expelled, but as there was not any undue hemorrhage I did not resort to Credé's method. I was

afraid of inducing rupture of the newly formed adhesions about the abscess wall. On the day after delivery the temperature was 101.4 F., pulse, 100. The general condition of patient was satisfactory. Symptoms of peritoneal soiling were absent. The lochial discharge was normal. During the first four days after delivery the daily temperature fluctuated between 100 and 104.4 F., pulse, 100 and 140. The abdomen was soft and the lochia normal. The patient complained of severe pain in the hepatic region and I feared a portal infection. On removing the drains I found the entire surface of wound covered with a necrotic membrane. On palpation of abscess cavity I found the general peritoneal cavity well walled off. Gentle irrigation of wound twice daily was of great benefit. The temperature dropped to 101 F. and the patient's general condition improved.

The patient left the hospital June 3. The high temperature which developed during the week after delivery was due to absorption of septic material at site of operation. The patient developed a phlebitis in the left thigh one week after leaving the hospital. She departed for home July 4, 1908, in the best of spirits.

CONCLUSIONS.

The following conclusions seem justified:

1. Perforative appendicitis is one of the gravest complications of pregnancy with which the surgeon has to deal.

2. Appendicitis complicates pregnancy with greater frequency than the tabulated cases would indicate.

3. Pregnancy does not seem to predispose to primary appendicitis. It may precipitate an attack in certain chronic cases.

4. The clinical manifestations do not differ from those of appendicitis in the non-pregnant.

5. Before a diagnosis is made, the medical attendant must bear in mind the possibility of ureteritis and pyelitis. The diagnosis is not, as a rule, difficult.

APPENDICITIS COMPLICATING THE PUERPERIUM.

	Author	Time	Operated	Perforated	Mortality	Remarks
1	Peterson	7 days	No	Yes	R	Perf. into Bowel.
2	Muret	12 days	No	Yes	D	
3	Fowler	10 days	Yes	Yes	R	
4	Munde	2 days	Yes	Yes	D	
5	No le	2 days	Yes	Yes	R	
6	Abrahams	5 days	o	No	R	
7	Jar a	7 days	No	Yes	D	
8	F senki	10 days	No	No	R	
9	V ney	4 days	No	No	R	
10	Marx	5 hrs.	Yes	No	R	
11	Marx	4 days	Yes	Yes	R	
12	Jewett	7 days	No	Yes	D	Perf. into l o xel.
13	Rostov sev	3 days	Yes	Yes	R	
14	Darquier	9½ hrs.	Yes	Yes	R	
15	Porak & Daniel	2 days	No	Yes	D	
16	Maute	2 days	Yes	Yes	D	
17	Le Page	4 days	Yes	Y s	D	
18	Labhardt	2 days	No	No	R	
19	Holmes	1	No	No	R	
20	Meurer	4 days	No	No	R	
21	Meurer	3 days	No	Yes	D	
22	Robson	1 d ys	Yes	Yes	R	
23	Robson	3 days	Yes	Yes	R	
24	Keyes	7	Yes	No	R	
25	Myer	2 days	Yes	Yes	R	
26	Davis	7	Yes	No	R	
27	Michel	9 days	...	...	...	No details.
28	Hilton	3 days	Yes	Yes	D	

6. Of 235 cases of appendicitis complicating pregnancy and the puerperium, 103 of the 207 cases complicating pregnancy were of the perforative variety. Of these perforative cases, 89 patients were operated on; 33 aborted before and 37 after operation; 36 mothers died.

All of the 14 patients who were not operated on in perforative cases died; 9 infants died. Of the 104 non-perforative cases, 50 patients were operated on; 7 aborted and one mother died. Of the non-perforative, non-operated cases, 6 patients aborted and 4 died. (These were mild attacks.) Of the 28 cases occurring during the puerperium 18 were perforative. Of these latter, 12 patients were operated on; 4 died. Two of the five not operated on accidentally recovered; the abscess ruptured into the rectum. All of the patients in the non-perforative cases recovered.[19]

7. The mortality of appendicitis complicating pregnancy is the mortality of delay.

8. Early, efficient surgical intervention is the secret of success in the treatment of appendicitis complicating pregnancy.

9. It is far better to evacuate an appendiceal abscess before emptying the uterus, since such a procedure would eliminate the possibility of flooding the free peritoneal cavity with pus.

10. If general peritonitis is present at time of consultation, *accouchement forcé*, followed by abdominal section, is indicated in the cases near the end of gestation. Cases have been reported in which general peritonitis was present at the time of operation, and yet the patient went to term.

1826 Delmar Boulevard.

RESULTS OF OVARIAN TRANSPLANTATION ON BODY WEIGHT AND EGG WEIGHTS IN FOWLS.*

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ST. LOUIS.

It seems that lack of growth follows the removal of and transplantation of ovaries in chickens. At the end of from six to twelve months the hens operated on are distinctly lighter than the controls. Also the eggs from the hens operated on weigh less than the eggs from the normal hens. As a rule, the weight of the egg and chick relative to the body weight is also less in the hens operated on.

During the second year both the actual weight of the egg and weight relative to the body weight in the hens operated on approach the normal.[1]

Fowl.	1907-'08. Egg wt.	Body wt.
G 1 (control)	59.96	2020
G 2 (operated)	47.50	1790
G 3 "	43.44	1650
B M 1 (control)	57.50	2270
B M 2 (operated)	37.12	1750
B M 3 "	41.20	1540

Fowl.	1906-'07. Egg wt.	Body wt.	1907-'08. Egg wt.	Body wt.
B 1 (control)	60.1	1500	63.55	1350
B 2 (operated)	40.9	1250	51.17	1250
B 3 "	46.6	1250	.....	.....
W 1 (control)	59.1	1480	59.01	1540
W 2 (operated)	49.2	1450	63.25	1450
W 3 "	48.6	1250	.....	.....

19. Just as the proof-sheets of this article were being corrected, the article by Weber and that by Herrnstadt came to my notice. Weber reports three perforative and two non-perforative cases. All the patients were operated on and all recovered. Herrnstadt reports a perforative case in a patient in the ninth month of pregnancy. Premature delivery of a dead fetus preceded the incision and drainage of an appendiceal abscess; the abscess was diagnosed some time after delivery of the fetus. The patient recovered.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. For a fuller account of these experiments the reader is referred to an article by the author entitled "Results of Removal and Transplantation of Ovaries in Fowls," Journal of Experimental Zoology, July, 1908.

SERUM TREATMENT OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.*

LOUIS WILLIAM LADD, M.D.

CLEVELAND, OHIO.

Previous to the work of Flexner in this country and that of Kolle and Wassermann and Jochmann on the continent, little had been accomplished in the production of a serum curative for epidemic cerebrospinal meningitis. The experiments of Bonhoff and of Lipierre, while suggestive of results, were too incomplete and unsatisfactory to warrant conclusions that they were working with a serum of protective and curative value. They were unable to reproduce the disease experimentally in animals in a form simulating that disease in human beings, and there is some doubt as to whether their control animals, for the most part guinea-pigs, died from toxemia or from infection.

THE SERUM.

As a result of the epidemic of cerebrospinal meningitis which devastated greater New York during the winter of 1904 and spring of 1905, in which there were about four thousand cases with 3,429 deaths, Dr. Flexner, as a member of a commission appointed by the Health Department of New York City, undertook an experimental investigation of epidemic meningitis, with the result that he proved conclusively that this type of cerebrospinal meningitis could, by direct inoculation into the spinal canal, be transmitted to monkeys in a form closely resembling that found in human beings. Furthermore, he was able to produce an antidotal serum for the meningococcus which, when inoculated in certain quantities at the same time as an otherwise fatal dose of living cultures of the meningococcus, would in almost all cases prevent the disease from terminating fatally in monkeys. He also could save monkeys inoculated with a lethal dose of living cultures of meningococcus when serum was injected into the spinal canal not later than six hours afterward.

Serum used in this series of cases was furnished by Dr. Flexner and was in brief made as follows: Horses were injected first subcutaneously, then intravenously, with gradually increasing doses of living meningococci. Later subcutaneous injections of an autolysate were used in gradually increasing doses. Many different strains of meningococci were employed in preparing the living culture and the autolysate for inoculation. After months have elapsed the horse was bled, the serum collected and bottled ready for use.

SERIES OF CASES TREATED.

The serum was first used systematically by me in a series of cases beginning April 2, 1907, at Castalia, Ohio, where an epidemic of cerebrospinal meningitis had created such havoc that half the population of the village of six hundred inhabitants had fled in terror. Between the months of January and April, 1907, 18 cases of meningitis developed. Of the 18 patients, 12 died and six recovered, a mortality of 66.7 per cent., a recovery of 33.3 per cent. Serum was used in three cases. All the patients recovered. In the 15 cases in which the serum was not used, 12 patients died and 3 recovered, a mortality of 80 per cent., and recovery of 20 per cent.

In the first few cases treated, from 5 to 10 c.c. of serum was injected at a dose, but wider experience showed it to be safe to use large amounts, and then from 15 to 30 c.c. was used at one injection, provided that much fluid was withdrawn. These injections were usually repeated at daily intervals until acute symptoms subsided and the spinal fluid became clear. In some instances two injections were made daily. When the meningeal symptoms disappeared and the temperature subsided, the further use of the serum was discontinued until a rise in temperature or increase in meningeal symptoms made it seem advisable to again employ it.

Altogether, the serum has been employed by me in 32 cases. Of the 32 patients one is still in the acute stage of the disease and can not be considered in this report. Of the 31 cases to be considered, in 30 the diagnosis was confirmed by finding the characteristic Gram-negative diplococci in coverslip preparations, and in almost all cases cultures were positive. In one case, clinically typical of cerebrospinal meningitis, with marked petechial eruption, only a few drops of bloody serum was obtained by lumbar puncture, from which nothing definite was made out. The boy's mother, however, had nursed a fatal case of this disease two weeks previous to the onset in him.

That these cases were not mild ones but of marked severity and a severe test of the therapeutic value of the serum is made evident by the fact that when serum was administered 17 of the patients were comatose, 3 unconscious and wildly delirious, and 12 semiconscious or conscious with great irritability.

Many of these cases were seen in the outlying and poor districts, where it was impossible to obtain as complete records in regard to temperature, pulse and respiration as desirable, though as a rule the records are complete enough to enable one to follow the progress of the cases satisfactorily. A good proportion of the cases were under constant observation at the various hospitals in Cleveland.

Eleven of the 31 patients died and 20 recovered—a mortality of 35.5 per cent. and a recovery of 64.5 per cent. Four of the comatose patients were moribund at the time of the administration of the serum, dying within a few hours. Three of the cases in which the patients were moribund were of the fulminating type and were seen forty-eight or less hours after onset. A fifth was a chronic case of nearly four months' standing, in which the patient was blind, deaf, comatose and a mere breathing skeleton at the time of administration of the serum. In a sixth case of thirty-nine days' duration before serum was employed, chronic hydrocephalus had already developed. Subtracting these 6 cases, manifestly unfair tests of the treatment and hopeless so far as serum therapy is concerned, there would be 25 cases with 5 deaths, a mortality of 20 per cent. and a recovery of 80 per cent.

Twenty-four cases were treated ninety-six or less hours after onset. Of these patients 16 recovered and 8 died, a mortality of 33.3 per cent. and recovery of 66.7 per cent. The four moribund patients were included in this group. Subtracting them, there would be 20 cases with 4 deaths and 16 recoveries, a mortality of 20 per cent. and recovery of 80 per cent.

Eighteen cases were seen seventy-two hours or less after onset of symptoms. Fourteen of the patients recovered and there were 4 deaths, a mortality of 22.2 per cent. and recovery of 77.7 per cent. Three of the

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

moribund patients fell within this group. Deducting these, there are 15 cases with 1 death, a mortality of 6.6 per cent. and recovery of 93.4 per cent.

Thirteen cases were seen forty-eight hours or less after onset of symptoms. Nine of these patients recovered and 4 died, a mortality of 30.7 per cent. and recovery of 69.3 per cent. Three of the moribund patients were included in this group. Subtracting these, we have 10 cases with 1 death, a mortality of 10 per cent. and recovery of 90 per cent.

Five cases were seen twenty-eight hours or less after onset of symptoms. All of these recovered, a recovery percentage of 100 per cent.

Eleven of the 31 cases developed in children under 5 years of age. Six of these recovered and 5 terminated fatally, a mortality of 45.5 per cent. and recovery of 54.5 per cent. In these 5 cases which terminated fatally 4 patients died of chronic hydrocephalus, late in the course of the disease, and a fifth case died during the acute stage of the disease.

The average duration of the disease in cases of recovery seen twenty-eight hours or less after the onset of symptoms, when treated with the serum, was twelve days; above twenty-eight hours and including forty-eight hours, nineteen days; above forty-eight hours and including seventy-two hours, forty-nine days. As most of the cases seen later than seventy-two hours died, a satisfactory statistical chart of cases recovering can not be compiled at this time.

Fever terminated by crisis in 11 cases and by lysis in 9 cases. In one case the temperature was normal at the time of administration of serum and afterward.

Of the 11 fatal cases 4 patients died from chronic hydrocephalus, and 4 were moribund at the time of administration of the serum. One patient in the acute stage of the disease died shortly after the administration of the serum, and in this case there is a possibility that the severe chill, cyanosis and rise in temperature to 106 degrees was produced by the bactericidal action of the serum on the numerous meningococci present and liberation of more endotoxins than could properly be taken care of by the patient. In one case death occurred in the chronic stage of the disease nearly six months after onset. Acute dilatation of the heart and pulmonary edema produced death during the acute stage of the disease in the last case.

In this series of cases the youngest individual was 3 months old and the oldest 28 years of age.

The onset was with marked gastrointestinal symptoms in six cases, marked diarrhea and vomiting being present.

Petechial eruption alone was present in 11 cases and associated with hemorrhages into the skin in 3 additional cases. A petechial eruption associated with herpes labialis was present in one case. A petechial, hemorrhagic and herpetiform eruption were all present in one case. A petechial eruption associated with erythematous eruption was present in one case. An erythematous eruption only was present in two cases. A macular eruption was present in one case. Mottling of the skin and herpes labialis were associated in one case. In two cases mottling alone was present. Nine cases were unassociated with skin eruptions. Surprisingly few patients had herpes.

In two cases well-marked urticarial eruption developed as a result of the administration of the serum. In one of these cases the eruption came on fifteen days after the injection of the serum, and in this case practically all the serum administered was given subcutaneously. In the second case the urticarial eruption developed one week after 35 c.c. of serum had been administered intraspinally, the child being perfectly well in other respects at this time.

Sequelæ were present in three cases. In Case 1 a left-sided foot drop developed, which is gradually improving. In Case 15 slight impairment in hearing persists. In Case 31 a marked suppurative arthritis of the left knee is rapidly clearing up under treatment by aspiration and injection of serum directly into the joint.

Examination of the spinal fluid in all cases showed the polymorphonuclear neutrophilic leucocyte to be the predominant cell with varying numbers of endothelial cells present. The largest number of endothelial cells found were in the fluid obtained from Case 31, in which diplococci were very few and hard to find. In many cases these endothelial cells were phagocytic for meningococci and not infrequently contained polymorphonuclear leucocytes in various stages of disintegration. In a very few cases with a diminution of turbidity of the spinal fluid an increase in lymphocytes was noted and in one case, well along in the course of the disease, differential count showed 98 per cent. of lymphocytes. As a rule the neutrophilic leucocytes are very much in excess, and as the fluid becomes clearer, while they diminish in numbers, differential count still shows them to be approximately 90 per cent. or more of all cells. The number of diplococci present in the spinal fluid seems to have no bearing on the severity of the clinical symptoms. In some cases in which there was most marked petechial eruption, coma and meningeal symptoms, it was difficult to find organisms. Occasionally organisms could be found only after cultures had been made or after incubation for twelve hours of the original spinal fluid. On examination of such incubated spinal fluid one often finds very numerous intracellular and extracellular meningococci, which can then be cultivated more readily.

In most cases in which recovery takes place after the injection of serum the spinal fluid progressively becomes clearer and diminished in amount. In several cases, especially those in which few or a moderate number of meningococci were found, these could not be cultivated subsequent to the injection of serum, though they grew readily at first. In such cases, as a rule, the diplococci do not stain well. At other times growths could be obtained until after the second or third dose of serum had been administered, and occasionally when considerable amounts had been given after longer intervals of time had elapsed. In cases in which the micro-organisms, both intracellular and extracellular, are present in exceedingly large numbers, it has been my experience that the prognosis is not so good, even though the patient may present no worse symptoms clinically than other patients from whom fewer organisms have been obtained. In such cases rises in temperature following the administration of serum have taken place several times, and in one case in particular I could not help but feel that more endotoxins had been liberated than could be properly taken care of by the antitoxic properties of the serum or by the patient himself. In such cases I should feel like giving a small amount of serum intraspinally with frequent repetitions and larger amounts subcutaneously. Or, if large

amounts be used intraspinally they should be sufficiently large (for example, 30 c.c. or more) to provide antitoxic properties enough to neutralize the endotoxins liberated. It should be advisable, also, to administer considerable serum subcutaneously.

Absence of fever does not mean necessarily a betterment in condition, as frequently a very purulent spinal fluid is withdrawn in cases with normal temperature when seen.

In several instances in which it has been difficult to find meningococci on first puncture and in which cells containing the meningococci contained very few, after the administration of serum and subsequent withdrawal of fluid, I have repeatedly found cells packed with meningococci, though possibly there were no more phagocytic cells than on first examination. This would indicate that opsonins played a definite part in the process of immunization. The poor staining of the meningococci seen after the use of the serum would seem to point to definite bactericidal properties in the serum.

Some of the cases presented features of unusual interest, and I shall briefly mention them.

In Case 2, which was almost in the third week of the disease, the disease terminated abruptly after the withdrawal of fluid and injection of serum.

Case 8 was interesting because a young man desperately ill was cured by subcutaneous injections of serum, only 5 c.c. having been given intraspinally. The subcutaneous method was used because frequent attempts to withdraw fluid by puncture were unsuccessful, only a few drops of bloody serum being obtained.

In Case 12 the question arises whether the liberation of endotoxins following the injection of serum had anything to do with the appearance of a marked chill, cyanosis and rise of temperature to 106 degrees with death shortly afterward.

In Case 13 puncture and injection of serum was made in less than two hours after development of meningeal symptoms with a result that the disease was promptly arrested in its progress in spite of the fact that there was much pus present and fairly numerous meningococci.

Case 17 is of interest because sharply staining Gram-negative intracellular diplococci were found in the spinal fluid at the time of puncture, approximately four months after onset. Cultivation of these were unsuccessful.

Patient 19, a child seven months old, was discharged apparently well sixty-one days after the onset of the disease, but was readmitted seventeen days after the discharge on account of convulsions associated with twitching of the right side of the face and of the extremities on the right side. There had been four such attacks, beginning six days after discharge from the hospital, and the child was admitted the second time during the fourth attack, which lasted five hours. This attack was promptly checked by lumbar puncture and the withdrawal of 35 c.c. of perfectly clear fluid. No further attacks have since developed.

In Case 23 it was difficult to tell what marked the onset of the cerebrospinal meningitis; whether an acute process due to the meningococcus was engrafted on a more chronic obscure trouble, or whether from the first the condition was due to a meningococcus infection of unusual onset.

In Case 25 a condition of hydrocephalus in which large amounts of clear fluid were obtained by puncture, following the subsidence of the acute meningeal symptoms and which gave every evidence of becoming chronic, eventually subsided completely and the child remains well at the present.

The feature of particular interest in Case 29 was the direction followed by the aspirating needle in getting into the spinal canal. Attempts to get the needle in by the direct method in the mid-line, or by the up-an-in method, starting slightly below the mid-line, resulted negatively, and fluid was obtained only when the needle was directed down and out, the needle being inserted below the mid-line between the third and fourth lumbar vertebræ. The child in this case was the subject of congenital lues, and no marked degree of scoliosis was present.

Case 31 is the most interesting and important of the series.

Patient.—M. N., male, aged 28, was perfectly well on the early morning of May 16, 1908.

Onset of Disease.—At 9 o'clock in the morning, May 16, the patient felt sick and was seized with a violent chill. Temperature of 103 F., with a pulse of 100, and normal respirations developed about 3 o'clock in the afternoon of the same day. Patient was seen by Dr. Cheetham at 10 o'clock in the morning. No meningeal symptoms were present at this time. On the evening of the 16th headache developed and at 3 o'clock in the morning of May 17 the patient became wildly delirious and unconscious. At 5 o'clock opisthotonus, Kernig's sign, petechial eruption, with true hemorrhages into the skin, and general rigidity were present.

Clinical Course and Treatment.—May 17: The patient was brought to Lakeside Hospital at 2 p. m. At this time temperature was normal and the pulse 100. The patient was still wildly delirious and unconscious and required the efforts of three men to control him while chloroform was administered and lumbar puncture performed. Forty c.c. of quite turbid fluid was obtained and 30 c.c. of serum injected. Examination of this fluid showed a very rare and rather poorly staining intracellular diplococcus. Cultures were made and the original fluid incubated with the result that typical meningococci grew out in large numbers in the incubated fluid and a few colonies developed on artificial cultures.

May 18: The patient was better. Temperature was normal and pulse still about 100. There was still marked rigidity and Kernig's sign was present. Semiconsciousness was present, though at times patient could be aroused and made to answer questions intelligently. At 10 o'clock a second puncture was done and 25 c.c. of still turbid fluid was obtained. Fifteen c.c. of serum was given. Bacteriologic examination of this fluid gave results similar to those obtained at the time of first puncture, except that cultures failed to develop and even in the incubated fluid the meningococci did not increase in numbers. From this time on no further growth was obtained from the spinal fluid.

May 19: A third puncture was made and 45 c.c. of slightly blood tinged, but less purulent fluid was obtained. This came out under considerable pressure. Fifteen c.c. more of serum was injected intraspinally. The patient's mental condition was much brighter. Kernig's sign was still present but opisthotonus and muscular rigidity was less marked and the petechial eruption was beginning to fade. On this day the temperature went up to 100 with a pulse of 100, though the pulse was of a better character than at any time previous.

May 20: The temperature rose to 101, though the patient's condition was gradually improving as regards mental and meningeal symptoms. Lumbar puncture was performed and 25 c.c. of very slightly blood-tinged and still less purulent fluid obtained. Fifteen c.c. of serum was injected.

May 21: The patient's condition was so good that no lumbar puncture was made. Temperature was 101 F., pulse 90.

May 22: The patient's temperature continued to be 101, though all other symptoms were disappearing. Lumbar puncture was performed and 10 c.c. of quite clear fluid was obtained. Fifteen c.c. of serum was administered. The patient's mental

condition was perfectly clear and except for very slight rigidity of the cervical muscles, and a still-present Kernig's sign, the meningeal symptoms had disappeared. Temperature still remained about 101 and continued at that point until May 25.

May 25: The temperature reached 103. The patient first complained of pain in the left knee joint. Examination of the joint demonstrated increased surface temperature, marked tenderness on palpation, and moderate bulging of the bursæ around the joint. Ice-bags were applied and the leg placed in a pillow splint.

May 26: The joint was more painful and hot and there was marked fluctuation present. The slightest motion caused excruciating pain. Aspiration was resorted to and 30 c.c. of thick purulent fluid obtained. Microscopic examination of this showed a very rare poorly staining intracellular diplococcus. No other micro-organisms were present. Cultures failed to develop even after incubation of the fluid. Fifteen c.c. of serum was injected into the joint through the aspirating needle.

May 27: The patient felt better, though there was still marked fluctuation present and great tenderness on motion. Temperature was 100. Aspiration was again resorted to with a result that about 40 c.c. of still very markedly purulent fluid was obtained. Fifteen c.c. more of serum was injected. Examination of the fluid removed resulted negatively insofar as cultures were concerned. When aspirating on this day lateral pressure was used in order that as much fluid as possible might be obtained. This was not done at the time of the first aspiration. The patient was told that if on the following morning he did not show more marked improvement surgical procedures would have to be resorted to.

May 28: The patient felt much better and there was less fluctuation, tenderness and surface temperature. Aspiration was again resorted to and 10 c.c. of distinctly less turbid fluid obtained, even though lateral pressure was exerted.

May 29: The temperature was perfectly normal and has remained normal since. There was no tenderness on palpation, surface temperature was normal, and patient could move the knee slightly. Aspiration resulted in the withdrawal of 2.5 c.c. of very slightly turbid fluid. Fifteen c.c. more of serum was injected. Since this date patient has had no more tenderness on motion and pressure can be exerted on the knee joint without pain. Bulging has disappeared.

May 31: There was an angle of flexion amounting to 90 degrees and there is every evidence that the joint will be cured with little or no limitation of motion.

Here, then we have an illustration of the specific action of antiserum as applied to one of the most common complications of cerebrospinal meningitis, namely, arthritis, and that, too, of a suppurative character, with a result that so far is truly astonishing. Knowing the feeble powers of resistance on the part of the tissues of the knee joint in warding off infection, I confess that when I saw thick pus withdrawn by my syringe I felt that nothing but surgical intervention would save the joint, for I have little faith in the medical treatment of purulent joints. Having seen so often the beneficial results arising from the administration of this serum when injected intraspinally I saw no reason for not trying serum in this locality. While it is too soon to state definitely that there will be no limitation of motion, I feel confident, by reason of the rapid strides made so far, that there will be little, if any. So far as my personal knowledge extends—for I have not as yet had the opportunity of looking up the literature on the subject—this is the first case in which a suppurative knee has been treated by direct injection into the joint with a specific serum of undoubted bactericidal and antitoxic properties. This case, of course, opens up the problem of treating suppurative conditions of joints due to other micro-organisms with specific antidotal serum, provided, of course, that such sera can be produced for the given micro-organisms.

In conclusion, I can do no more than say that, so far as I myself am concerned, I have no doubt as regards the wonderful efficacy of Dr. Flexner's serum in the treatment of epidemic cerebrospinal meningitis, provided it is used on patients not moribund or on those in whom chronic hydrocephalus has not already developed. I confidently believe that statistical reports excluding these cases will show that our percentage of recovery will contrast favorably with our previously high percentage of deaths.

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THE SERUM TREATMENT OF MENINGITIS.*

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Flexner's antimeningitis serum has been in use for epidemic cerebrospinal fever now for one year. A final opinion of its value as a therapeutic measure must be reserved until the number of cases in which it has been used is very large. Our experience at the Johns Hopkins Hospital with a small series has been so striking, however, that Dr. Barker has asked me to present it to you.

The Board of Health statistics for Baltimore do not show the present epidemic to be more severe than those of previous years. In fact, we feel that the cases are rather sporadic than epidemic. And yet to date we have had twenty-one cases in the Johns Hopkins Hospital since January 1, compared with thirty-three cases in the previous nineteen years of the hospital. This we might mention as the first effect of the serum. The knowledge of its use has led local physicians to hurry their cases to the hospital and so enabled us to get them early in the disease—a very important factor in the outcome.

Of the thirty-three patients treated simply by lumbar punctures in the previous years of the hospital, twenty-one died and twelve recovered, a mortality of 64 per cent. The mortality for the individual years has varied from 43 per cent. to 100 per cent.

With this may be compared a mortality of 14 per cent. for the twenty-one cases treated with the antimeningitis serum in the past five months. Three of the twenty-one patients have died. One of the three was a fulminant case, in the class regarded by Flexner as beyond the reach of treatment. The second had a complicating bronchopneumonia of both lungs on admission and died in forty-eight hours. The third was a boy 29 months old who received his first injection of serum on the fourteenth day of the disease, when he was unconscious, having convulsions, and practically in extremis. He died of a respiratory paralysis in seventy-two hours; even in his case two injections of serum had succeeded in clearing the spinal fluid of organisms and giving sterile cultures.

As to age, twelve of the twenty-one patients were children under 12 years. Of these but one died, a mortality of 8 per cent.

Seventy per cent. of the cases not treated by serum have had complications, mainly bronchopneumonia,

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whereas eight of the twenty-one serum cases, 38 per cent., suffered from them as follows:

Otitis media	3
Pneumonia	2
Both otitis media and pneumonia	1
Arthritis	1
Acute myocarditis	1

One of the patients with pneumonia had a metastatic infection of the right eye, but the terrible sequelæ of former years—palsies, mental defects, deafness and blindness—were rarities. The only sequelæ in the twenty-one cases were two of deafness and one of blindness.

Much more striking than the percentages of mortality, however, have been the effects observed at the bedside and in the laboratory in each individual case.

It has been our rule to do a lumbar puncture as early as possible in every case with symptoms suggesting meningitis, and to inject serum, giving the patient the benefit of the doubt. By this routine one patient with pneumonia, one with typhoid fever, two with pneumococcal meningitis, one with influenzal meningitis, and six with tuberculous meningitis have received serum. In no one of these cases has any bad effect resulted.

The serum has been injected by a syringe connected with the lumbar puncture needle. In most cases as much serum has been injected as spinal fluid removed, not exceeding 30 c.c.; following the suggestion of Dr. Flexner. But in twelve instances, because of the severity of the symptoms and the height of the temperature—in fact, because we thought it was needed—the amount of serum injected has exceeded that of the spinal fluid removed. Strangely, notwithstanding this fact, the so-called pressure signs and symptoms have been relieved by this treatment.

Many of the patients are temporarily upset by the puncture and injection. They complain of pain in the knees, hips and about the rectum during the injection, evidently referred pains from the lumbosacral roots. These sometimes persist several hours. A slight temporary rise in temperature often follows the injection. Urticaria and erythematous eruptions are not uncommon.

It has taken from twelve hours to three days to reap the benefit from the serum. All favorable cases react to a certain extent after one injection. Some cases need but the one injection. Two cases have required six injections and one seven. We believe the serum should be given daily until the drop in temperature and the disappearance of symptoms and signs indicate that the process is arrested. And it should be renewed at any sign of flare-up.

1. The effect on the *temperature* has been to cause a fall in one of two ways—either abruptly or by lysis. Eight cases terminated abruptly and eight by lysis. In the other five the temperature remained elevated—in two due to complicating pneumonia. The other three were fatal. One case remained normal in temperature after a single injection, but the majority showed a rise the next day and required from two to six injections to preserve a normal temperature.

2. With the fall of temperature, in three to twelve hours after the first injection, the *symptoms and signs* begin to clear. The symptoms—delirium, headache, pain in the neck and back, and the general hyperesthesia—disappear with remarkable rapidity. The signs—trabismus, stiffness of the neck, retracted head, opisthotonos, and the Kernig sign—are more persistent. The Kernig is often the last sign to disappear. The result is the unusual picture of a child, bright, cheerful, and alive to its surroundings, but with a stiff neck and back, occasionally in opisthotonos.

3. The effect of the serum on the *spinal fluid* itself is exceedingly interesting. Three changes are brought about:

First, the polymorphonuclear leucocytes are increased in the spinal fluid. This is only after the first injection, and they disappear in the process of healing. From 200 cells to the cubic millimeter they have been increased to as many as 4,000. The influence of this on the leucocytes in the circulating blood is striking. A high leucocytosis, 30,000 to 40,000, is reduced by the demand in the spinal fluid; a low one, 16,000 to 18,000, is increased. In every case there is a very constant, positive chemotaxis for polymorphonuclear leucocytes in the spinal fluid. This has been observed in one case of influenzal meningitis. In six cases of tuberculous meningitis the clear spinal fluid with predominating small mononuclear cells has become clouded with polymorphonuclears after serum, and the small mononuclear cells have totally disappeared. The serum caused no evident change in the two cases of pneumococcal meningitis.

Second, the meningococci, both extracellular and intracellular before serum, become entirely intracellular, so that it is often difficult to find organisms outside of cells in specimens after serum. This was observed also in one case of tuberculous meningitis and in the influenzal meningitis.

Third, as they become intracellular they are being destroyed. They no longer stain deeply and distinctly, but are ill-defined and hard to see. They resemble granules rather clear-cut diplococci. This is evidenced by the cultures. The number of colonies from approximately the same amount of centrifugalized sediment are reduced from 200 to 300 down to 8 or 10 after one injection of serum. Most cultures have been sterile after two injections, several after one.

CONCLUSIONS.

In conclusion, from this small experience, we may briefly summarize our impressions as follows:

1. All cases of meningitis in which meningococcus infection is suspected should undergo lumbar puncture and serum injection as early as possible.

2. The serum does no harm in cases not of the meningococcal type. It may do good.

3. The course of the disease is changed by the serum. The long drawn-out chronic cases are not seen, and the terrible sequelæ—often worse than death—are rare.

4. As to the character of the serum, the rapidity with which signs and symptoms disappear suggest an antitoxic property; the positive chemotaxis for polymorphonuclear leucocytes, and the promoted phagocytosis are most definite and constant features; finally, the reduction in the number of diplococci, the change in their staining properties, and the loss of viability speak for a bactericidal power—although it is a question if this may not be explained by the phagocytosis.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LADD AND SLADEN.

DR. WILLIAM S. CHASE, Akron, Ohio: During the epidemic of cerebrospinal meningitis that occurred in Akron in the latter part of April and in the months of May and June, 1907, there were 22 cases of this disease. Of that number, 12 patients received the antiserum intraspinally; 10 did not receive it. Of the 12 treated with the serum, 9 recovered and 3 died, a mortality of 25 per cent. Of those not receiving the

serum, 1 recovered and 9 died, a mortality of 90 per cent. Of the 3 patients who received the serum, 1 was moribund at the time of receiving the injection; another case was of the fulminating type, the type that Dr. Flexner has considered hopeless; the third patient received 15 c.c. of the serum twenty-four hours after the onset of symptoms, and the reaction was as marked and striking as in any case that went on to complete recovery. But this patient died suddenly and without warning. An autopsy was not permitted. If one or two of these fatal cases could be eliminated, there would be shown about the same percentage of recoveries when the serum was used as the percentage of deaths when it was not used. These figures, taken from the same epidemic, he regarded as most impressive. All the patients who received the serum were treated at the Akron City Hospital. The clinical diagnosis in each instance was made by an examination of the cerebrospinal fluid and the detection of the *Diplococcus intracellularis*. In the first case, which immediately followed those seen at Castelia by Dr. Ladd, we, the members of the staff, were in doubt regarding the dosage and did not give over 10 c.c. There was nothing at that time to govern the dosage in human beings. The first two cases, while each patient recovered, ran a prolonged course. We were careful at first not to inject any more serum intraspinally than the amount of fluid they withdrew; therefore, in one case 5 c.c. were given as an initial dose. Afterward we disregarded this rule as an unnecessary precaution. Only two cases showed any pressure symptoms, and in both of these we were careful not to inject more serum than fluid withdrawn. The effect of the serum when injected intraspinally has already been described in detail by Dr. Barker. I wish to lay special emphasis, however, on the point that the effect of the serum in ameliorating the symptoms can not be given in a statistical report or be depicted graphically on a clinical chart. One must see these cases in order to realize the general improvement coming within twenty-four hours after the injection. In the first one or two cases we wanted to see if the same results followed lumbar puncture without the injection of serum. The reaction was not marked. There was no striking drop in the temperature and no amelioration of mental symptoms. We did this because we had practically nothing to guide us in reaching a conclusion as to the relative merits of the serum. I agree with what the other speakers have said in regard to the necessity of making intraspinal injections early in order to get the best results. In my series of twelve cases benefit followed the intraspinal injections of the serum even in cases which had run a course of ten or fifteen days. In one case, which had been a very severe one (all the patients treated by the serum were comatose or delirious at the time of receiving the first injection), the patient did not get the serum until the tenth day and then received but one injection. Marked improvement followed and the temperature dropped to normal in twenty-four hours. In another case the injection was made on the tenth day with a similar result. The temperature fell to normal and the patient passed from a period of wild delirium to one of perfect quiet. He made a complete and quick recovery. What impressed me very much about the cases in which the serum injections were given was the absence of sequelæ. In no case were there any of the eye or ear symptoms which usually follow the epidemics of cerebrospinal meningitis. The only sequela which persisted in any case was in one patient, a partial paralysis of the leg muscles. This case ran a course of five or six weeks. Five cases terminated by crisis; four by lysis. None of the patients received any medication whatsoever, except where it was necessary to give an injection of morphin or hyoscin to quiet the severe delirium.

DR. FRANK S. JOHNSON, Chicago: I have a patient at present under my care who was treated with the serum. This case had a gradual onset, and not until the patient had been in the hospital for some time did we procure the serum. During the early stages the patient, a boy, had no mental impairment whatever. There was a gradual onset of the cerebral symptoms. When he received his first injection, however, he was delirious. Fifteen or 20 c.c. of cerebrospinal fluid were withdrawn and the same amount of serum was injected. After the first injection the patient's temperature fell, but the delirium continued and it was necessary to give a second injection, and more injections; in two weeks this patient had received 200 c.c. of Flexner's serum. Finally the delirium disappeared. After the last injection there was a slightly elevated but fluctuating temperature. This I attribute to an incomplete destruction of the infection or perhaps to the effect of the serum which was given. There was no complication following the trouble, except a slight impairment in the strength of the left arm and left foot. The patient otherwise made a good recovery.

DR. EDWARD F. WELLS, Chicago: The only case of cerebrospinal meningitis in which I have seen the serum used was at the Cook County Hospital. This patient was severely ill with the ordinary symptoms that attend this malady. There was mild delirium, unconsciousness, high temperature, etc. He had been sick for four or five days when the first injection of the serum was administered. The fluid recovered from the spinal puncture previous to the injection was exceedingly turbid and the cellular elements so numerous that an accurate count was not practical. Following the first injection there was a marked amelioration of all the symptoms and the character of the spinal fluid changed, becoming clear in a remarkably short time. Altogether three injections were given, the symptoms promptly subsiding, and the patient made a prompt recovery. Two other patients were treated at Cook County Hospital, both with the serum, and recovery followed in these instances as well. Without knowing all the facts in these two cases, I know that both received the serum late, and the symptoms were not so characteristic and the serum did not produce the same changes as in my own case.

In estimating the value of any treatment of cerebrospinal meningitis, it is only fair to say that the malady itself would vary greatly in seriousness and dangers from various causes. I have had occasion to observe two epidemics of cerebrospinal meningitis occurring on virgin soil. In both of these epidemics the cases were exceedingly severe and had a high mortality. In both, as time went on, the malady became less severe and there was a larger proportion of recoveries. In Chicago we have had cerebrospinal meningitis with us since the World's Fair, and the disease has been rather mild. At this stage in the estimation of the value of Flexner's serum I am of the opinion that personal impressions should be considered rather than the statistics. I wish mildly to criticize Dr. Ladd in this. When one cuts out of his statistics a certain class of cases, as Dr. Ladd did, much force is lost. I suggest that when one begins to eliminate certain classes in a series of cases, a beginning should be made at the other end by a plain statement that in this series, for instance, 36 per cent. would recover in any case with ordinary or no treatment. Dr. Chase, in his published paper, stated that out of 12 patients 9 recovered under the serum treatment, while of 10 patients who had not received the serum treatment 9 died. Now when such statistics, accompanied by the statement that the physician's opinion, based on personal observation of the cases, was favorable to the usefulness of this serum, was presented to us we should sit up and take notice.

DR. JOSEPH EICHBERG, Cincinnati: During the last two months epidemic cerebrospinal meningitis has been prevalent in Cincinnati, and from 15 to 18 hospital patients have been treated with the serum. Cultures were taken at the time the first injections were given, and the cases were known to be distinctly epidemic cerebrospinal meningitis, the symptoms usually being very severe when the puncture was made. The observations made on these cases are as yet incomplete, but they substantiate what has been stated in regard to the immediate benefit afforded by the use of the serum. I think it is justifiable, even if later studies do not establish the curative value, to give the serum as soon as the diagnosis is made. The results from the serum in patients over 30 years of age in our series of cases were not as good as were secured in the younger subjects so far as the primary effects were concerned. The best results were obtained in those patients whose ages ranged from 8 to 25 years. In two cases there appeared a papular eruption very much like that of measles, except that

the papules were much larger. They were crescentic in shape and tended to become confluent; this eruption appeared in two patients and within twenty-four hours after the use of the serum in both instances. It caused little inconvenience. At the point of the introduction of the injection, local anesthesia was at first produced by means of ethyl-chlorid spray; this sometimes results in a deep and extensive ulceration about the point of introduction of the needle, as the local nutrition was interfered with in consequence of pressure after the freezing. After this experience we gave the patient a few whiffs of chloroform and discarded local anesthesia. I think that it is still too early to judge of the curative effects of the serum because of the great variability of the virulence of the epidemics. In the present epidemic the percentage of recoveries is high. But it seems to me that we are justified in using the serum because of the immediate primary change in the symptoms and the favorable turn produced evidently by the serum. There is the immediate relief of the headache, a decline in the fever, a marvelous clearing up of mental symptoms, a subsidence of the delirium, all caused by this serum, reminding one of the clearing up of the symptoms in diphtheria under the influence of the antitoxin.

DR. D. E. ENGLISH, Millburn, N. J.: Does Dr. Ladd give 30 c.c. of serum intraspinally at the first injection? Does he give the amount of serum that corresponds to the amount of cerebrospinal fluid removed? Or does he try to take away more fluid than he wishes to give of the serum? Is the subcutaneous dose larger than the intraspinal dose?

DR. O. M. GILBERT, Boulder, Colo.: I chanced to see a case of cerebrospinal meningitis in a specially severe epidemic in which the streptococcus was more in evidence than the *Diplococcus intracellularis*. The bacteriologist who made the examination first reported back that it was a case of pure streptococcus; but later the diplococcus was found. The giving of 20 c.c. streptolytic serum resulted in recovery. We had no Flexner serum. Eighty per cent. of our patients had been dying. Would not the streptolytic serum be of value when both germs are demonstrated?

DR. L. W. LADD, Cleveland: I have had little experience in the use of the Flexner serum in other than the meningococcus type of cerebrospinal meningitis. I have used it in several cases of tuberculous meningitis, but without any result whatever. In one case of meningitis in which streptococci and an unidentified streptothrix were associated I used the serum. The patient was moribund when seen and died three hours afterward. In Wheeling, West Virginia, I saw a case which I thought one of tuberculous meningitis. Lumbar puncture was performed and an increased amount of spinal fluid obtained, under considerable pressure, but examination of the fluid showed a normal cell picture and no micro-organisms could be found on coverslip or by culture. Following the puncture and giving of serum this patient recovered, but was not included in the reported series. I have used the antistreptococcus serum in one case only. This was the case of a child who had had otitis media followed by a mastoid infection and later complicated by meningitis. Lumbar puncture was performed and a very thick purulent fluid was obtained in which streptococci were present in large numbers. The antistreptococcic serum was used repeatedly and was followed by some apparent benefit, but death ensued in spite of the serum. The cases which I reported were all meningococcus infections. There were no mixed infections and with one exception the meningococcus was present in all. In answer to Dr. English's question I generally give the serum intraspinally, but sometimes both intraspinally and subcutaneously. When little fluid is removed by lumbar puncture I give more subcutaneously. The amount given intraspinally depends somewhat on the amount of fluid withdrawn. If a large amount is obtained, 30 c.c. are injected intraspinally. I follow the rule of withdrawing the fluid until it flows, drop by drop, as under normal conditions. Serious symptoms have followed the withdrawal of too much fluid at one time. In answer to Dr. Wells' criticism of my paper, I have purposely given statistics, in the first place including all cases irrespective of their condition when first seen and irrespective of the length of time which had elapsed after onset of the case, and then ruling out such cases as were manifestly unfair tests of the efficiency of the serum. Surgeons have had great trouble in educating the medical profession to turn over to them their cases of appendicitis for operation, before symptoms of general peritonitis developed, in order that the result might be most favorable to the patient. The same necessity of early diagnosis and early use of serum is present in the treatment of this disease, and comparative statistics show this strikingly. Ruling out the moribund patients in those seen seventy-two hours or less after onset, 93 per cent. recovered. All of the patients, 5 in number, seen twenty-eight or less hours after onset recovered. Sometimes, of course, it is impossible to make a diagnosis as soon as desirable. With regard to the nature of the substances active in the serum, I do not think that Dr. Flexner has absolutely committed himself. It certainly is true that phagocytosis is stimulated, and in view of the fact that the meningococci after the use of the serum were reduced in numbers and stained poorly and that the patients treated cleared markedly in mentality, it seems reasonable to suppose that the serum is both bactericidal and antitoxic in its action.

DR. FRANK J. SLADEN, Baltimore: At a recent symposium on this subject before the American Pediatric Society Dr. Flexner reported an analysis of 380 cases in which the serum had been used. The mortality for 247, the number in this country, is about 27 per cent. At this time also Dr. Dunn of Boston reported 40 cases with 9 deaths, 22.5 per cent. mortality. Dr. Churchill of Chicago had a mortality of 22 per cent. for 9 cases. And Dr. Wilkinson of Washington, D. C., reported 3 deaths in 10 cases. The comparison of these statistics with those of the New York epidemic is striking. The mortality for 2,305 cases treated without serum was between 80 and 90 per cent. Dr. Flexner has committed himself, stating that he believes the power of the serum is chiefly bactericidal. He is a pathologist, and his opinion is based mainly on laboratory experiments. Clinically, however, the rapidity with which the symptoms and signs clear up impress us with the importance of the antitoxic property.

DR. C. F. HOOVER, Cleveland: One point brought out in this discussion should be appreciated by every physician, viz., the need of giving the serum as early as possible to anticipate the encephalomyelitis which results from meningo-arteritis which has lasted several days.

URETERO-VESICAL IMPLANTATION. A NEW METHOD OF ANASTOMOSIS.

WITH REPORT OF CASES.

R. L. PAYNE, JR., M.D.
NORFOLK, VA.

CASE 1.—*Patient.*—Annie G., aged 30, colored, was admitted to St. Vincent's Hospital, January 30, suffering with large bilateral pus tubes. The pus sacs were removed through an abdominal incision and drainage instituted. The wound healed up to a small sinus, when, on the fourteenth day following operation, urine began to flow from the sinus and a diagnosis of ureteroabdominal fistula was made. By the use of the cystoscope and ureteral catheters it was determined that the left ureter was the one affected, and two weeks later I performed the following operation:

Operation.—An incision was made from the lumbar region obliquely forward to the middle of Poupart's ligament, cutting down to the lumbar and subperitoneal fat behind and to the peritoneum in front. The peritoneum was then gently stripped inward from off the psoas muscle and iliac bone until the ureter was located at the bifurcation of the iliac artery. The ureter was deflected with the peritoneum. It proved to be very large and thickened and stripped from the membrane very easily. It was then freed down to the fistula tract, where the opening of the ureter proved to be very small and strictured. When stretched tight it lacked two inches of meeting the bladder, and I found that the injury to the ureter was behind the base of the broad ligament. The vesical stump was buried and hidden in a mass of inflammatory

exudate, and no attempt was made to free it. I then stripped the peritoneum backward from the bladder, loosened the bladder from its attachments on either side, and with the aid of a sound passed through the urethra into the bladder by an assistant, pulled the organ to the left and upward, thus elongating it into a diverticulum effect. The bladder was then fixed in this shape and sewed with catgut to the pelvic fascia both above and below the external iliac artery. This elongation upward of the bladder permitted a good approximation of the shortened ureter and the anastomosis was made by the method herein described. When the anastomosis was completed I found that too much of the ureter had been used for the anastomosis and that the duct was rather taut. I was afraid to leave it thus, fearing that the anastomosis might tear out, so I proceeded to lower the kidney a sufficient distance and fix it to relieve the strain. A small gauze drain was passed through the abdominal opening of the original sinus tract backward to the retroperitoneal point where the end of the ureter had been dissected out and another small drain placed from this point out through the loin space. Thus there was a gauze drain running straight through the patient, beginning in front just below the navel and emerging in the lumbar space behind, the whole drainage tract being extraperitoneal. The muscles and fascia were closed in layers by chromic gut, and the skin by interrupted silk sutures.

Postoperative History.—The patient was catheterized every four hours for the next five days, and at the end of this period she voided without much pain. A week later this difficulty had about disappeared, and it is interesting to know that a normal bladder can undergo such a transposition without interfering with the urinary function. The drain passed into the sinus tract was removed on the third day, and this portion of the drainage canal healed up in three more days. The drain in the loin, however, continued to discharge a seropurulent matter for about two weeks, and I thought that it was a leakage from the vesical stump of the divided ureter. This stopped, however, and with the exception of three small stitch abscesses the wound healed rapidly. The patient was walking around at the end of the fourth week and has had no trouble up to the present time.

Witzel was the first to elongate the bladder for a shortened ureter, and Baldy has since reported a case in which he sewed the bladder to the stump of the broad ligament. Several years ago Bovee successfully lowered the kidney in a dog for a shortened ureter but as far as I can find, the case herein reported is the first instance in which the procedure has been carried out on a human being.

Since Simon in 1869 first recommended nephrectomy for ureteral fistula, many prominent surgeons of the world have been striving to perfect operative means which would obviate the necessity for this radical measure.

Several varieties of uretero-ureteral anastomosis have been devised, none of which has proven entirely satisfactory or simple in the hands of the average good surgeon, and so the abnormal varieties of implantation into the colon, rectum and skin have been practiced in a limited number of cases.

It is certain that nephrectomy has been and is still too readily looked on as the proper panacea for the awful conditions resulting from ureteral fistula, and many a healthy kidney has been sacrificed without previous effort to cure the fistula by more conservative methods.

Of all the various plastic procedures for the relief of ureteral fistula, ureterovesical implantation is undoubtedly the best, for it reestablishes a natural state of things, cures the fistula and above all else conserves the kidney. So far as the kidney is concerned, the same can not be said of grafting into the bowel or on the skin, for infection invariably follows and nephrectomy becomes a necessity.

Of the two latter measures bowel implantation is preferable to skin implantation, but since both are done, except in exstrophy, because of a shortened ureter, neither procedure is justifiable provided the pedicle of the kidney is long enough to permit of its being lowered.

Van Hook says that intestinal implantation is unjustifiable and Byron Robinson reports that in his cases of intestinal implantation in animals all the subjects died from peritonitis.

The objections to vesical grafting in cases of ureteral fistula have been that it could be applied only to those cases in which the injury is very close to the bladder; for a ureter severed at the base of the broad ligament, behind the uterus, or higher up, would not permit of the renal stump approximation with the bladder. It is true that the ureter is very elastic and hence amenable to much stretching, but traction largely reduces the possibilities of anastomotic union and at the same time tends to lessen the lumen of the duct and thus contributes a factor in the induction of hydronephrosis, the greatest danger of ureteral anastomoses. This source of danger can be overcome by lowering the kidney as was practiced in my case.

Fig. 1.—Ureter split and traction sutures passed.

The other objections to the various modes of ureterovesical implantation are, first, stenosis, which is apt to occur at the site of vesical grafting and, second, the danger of infection from ascending septic processes. Regarding these two points I believe that the method of anastomosis herein described and illustrated in Figures 1, 2 and 3, presents points in its favor which tend to obviate these results.

By the common method in vogue the severed ends of the ureter is united flush with the bladder wall, mucous membrane to mucous membrane and when the process of cicatrization takes place a resulting contraction and stenosis must follow. To correct this, several operators have followed the plan of Van Hook, splitting the ureter on one side only, flaring the end and thus uniting the ureter into the bladder.

By the method adopted by myself the ureter is split up on two sides, thus forming separate flaps and when these are drawn down into the bladder by traction sutures and fixed on each side of the vesical incision there is a resulting ureteral opening which is larger than the caliber of the tube and around which there are no

sutures or united mucous margins to undergo cicatrization and subsequent contraction. The union of these flaps to the mucous membrane of the bladder was at first a matter of doubt, but I can assert that in the cases in which I have used this method the flaps do unite firmly and at the same time atrophy and smooth off to the bladder wall. Most probably the fibrous union begins in an erosion around the traction sutures but in any event firm union does take place, for with the cystoscope I demonstrated not only the fibrous fixation of the flaps but a large funnel-shaped ureteral opening with no tendency toward contraction. These cystoscopic examinations were made at intervals of three weeks to three months following operation.

Thus I believe that I have a method of anastomosis in which the possibilities of stenosis are very small, thereby eliminating the great danger of all forms of ureteral implanation, whether into bowel, skin, bladder or vagina —resulting hydronephrosis being the common sequel of all forms of experimental ureteral grafting.

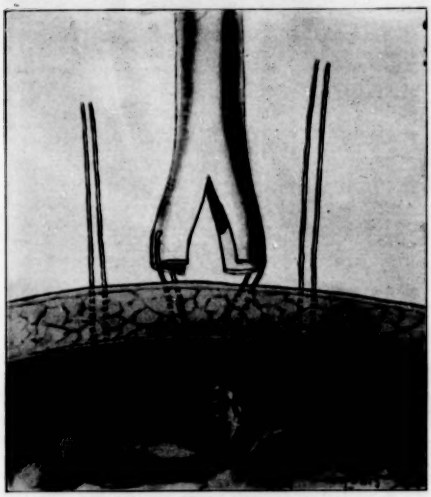

Fig. 2.—Traction sutures passed through incision and out through bladder wall ready for tying.

How infection takes place following a ureteral grafting I do not think any one knows. The common theory is that it is due to the loss of the valve-like opening of the normal ureter and the substitution of an orifice which is patent, thereby allowing regurgitation of infected urine from the bladder. I believe that regurgitation does not account for these infections, but that infection is due to the stenosis following the method of anastomosis, thus forming obstruction to the free discharge of urine into the bladder.

In support of this assumption I present two cases of ureteral fistula in which the severed end of the ureter was markedly strictured, the ureter dilated and thickened, and a pronounced pyuria present. The strictured ends were cut off, the anastomosis into the bladder completed by the flap method herein described, giving a wide patent orifice and in three weeks' time the pyuria in each case had entirely disappeared.

Granting, however, that this regurgitation does take place after ureteral grafting, I do not believe that there is any valve to a normal ureteral orifice which prevents this happening, for Pozzi, Modkinsky and Desnos report cases of leakage of urine from the bladder through the vesical stump of a divided ureter, Hartman reports leakage following a nephrectomy and I have reason to believe that the same thing happened in one of my cases. Certainly there are thousands of cases of ascending renal infection in which the ureters and bladder are anatomically normal. Polk did a successful bladder implantation of ureter following resection for cancer. A second operation for return of cancer revealed a dilated and thickened ureter which he considered due to constriction at the point of anastomosis.

I believe that infection of the ureter and renal pelvis of the affected side is always present in ureteral fistula and since this condition cleared up rapidly in my cases after anastomosis by the flap method, I am led to believe that regurgitation plays a small rôle, if any, in ascending infections following ureterovesical grafting. If I believed otherwise, then the method of anastomosis herein described should be condemned, for with the resulting wide opening ample chance for regurgitation is offered.

Free drainage is the great surgical principle in the relief of all infections and no ureter or kidney already infected can be rid of this condition while stenosis exists at the ureteral orifice.

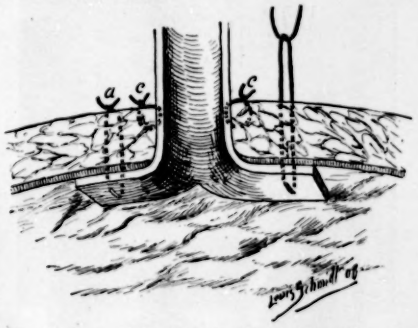

Fig. 3.—Cross section of anastomosis complete: (a) traction suture tied; (c) vesico-ureteral sutures tied.

While the urine is being poured into the bladder the organ is in a quiescent state and it empties itself by a contraction of its musculature, which is composed of an inner and outer longitudinal and a middle circular layer. Now if the site of ureteral implantation be made at the summit of the bladder to further prevent regurgitation, and the ureter passed directly through the bladder wall, hence through this mesh-like arrangement of muscle fibers, it seems reasonable to conceive that vesical contraction would produce a valve-like constriction of the ureter, thereby preventing any forcible regurgitation. This procedure was followed in my cases.

Several operators have endeavored to imitate the normal oblique course of the ureter by folding the bladder around the ureter. This was first done by Witzel, after the manner of folding a handkerchief around a pencil (Fig. 5). If this method is used it can be readily seen how, when vesical contraction takes place,

instead of contracting with a valve-like action the walls of the ureter are held apart and regurgitation favored.

Some operators, originally Witzel, claim for this last procedure the advantage that it further anchors the ureter to the bladder and hence prevents any tendency for sutures to tear out at the site of anastomosis. This seems very commendable, but I believe that the two flaps produced by the method described herein, when united to the bladder, result in a sufficient fixation of the ureter to bladder to afford strong union.

If there is any doubt in the mind of the operator regarding the union of these flaps he can readily resect a little of the mucous membrane on either side of the vesical incision, thus securing approximation of connective tissue to connective tissue. The use of the traction sutures further facilitates the anastomosis by affording a quick simple adjustment and firm fixation of the ureter while the anastomosis is completed with the vesico-ureteral sutures. Kelly attained this end by grasping the end of the ureter with long forceps passed through the urethra into bladder. Markoe used a small catheter passed up the ureter, across the bladder and out the urethra, while Kaysar held his ureter in place by long sutures passed through the end of the ureter and drawn out through urethra, fixing them to a weight or the external dressing.

Fig. 4.—Cystoscopic view of anastomosis healed.

As regards the method of approach to the ureter I think that the extraperitoneal route incurs not only considerably less risk to the patient but affords a freer access to the ureter and plenty of space through which to work. Baumm was the first to do an extraperitoneal operation, while Tauffer, Markoe, Bazy and Navarro employed the transperitoneal route. Albarran made his approach by the hypogastric route while Delbet used the L-shaped incision over the sacrum advocated by Kraske.

In reviewing the literature I have been able to collect seventy-seven cases of ureterovesical implantation with thirteen deaths, giving a mortality of 16.08 per cent. Of these seventy-seven cases, thirty-eight were intraperitoneal operations with eight deaths, a mortality of 21 per cent. Eleven cases were extraperitoneal with one death, a mortality of 9.09 per cent., while in the remaining twenty-eight cases there were four deaths and the method of approach undetermined. Thus statistics point with greater favor to the extraperitoneal route.

I make the lumbo-ilio-inguinal incision beginning in the loin one-half inch below the last rib and at the outer margin of the erector spina muscle. This runs obliquely downward parallel with the last rib to a point one inch inside the superior iliac spine and is then prolonged downward parallel with Poupart's ligament by cutting with scissors while the peritoneum is separated with the forefinger.

Although this is a long incision, the important structures cut are very few. Posteriorly the subcostal artery and vein and last dorsal nerve should escape, and cutting forward the only other structures severed besides the muscles are the lateral cutaneous branch of the last dorsal nerve and the superficial and deep circumflex iliac arteries. The hypogastric branch of the ilio-hypogastric nerve which runs parallel with the wound should escape cutting.

The shock following the extraperitoneal operation is

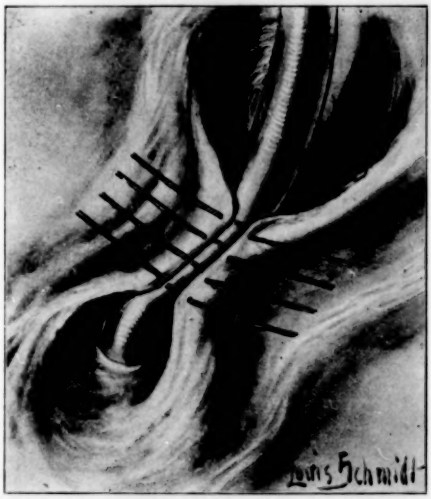

Fig. 5.—Witzel's method.

small compared to that of any intra-abdominal work and the fact that by the intra-abdominal route the peritoneum is cut both in front and behind, that the sympathetic nerve supply is vastly disturbed, combined with the imminent possibility of infection, should always make the extraperitoneal operation the one of election. In conclusion I report a second case in which the patient was operated on successfully by the method described.

CASE 2.—*Patient.*—Miss S., aged 26, white, was referred to me by my father. She had had a panhysterectomy done on her five months previous, and five days following the operation urine began to flow from the vagina. I found the left ureter discharging into the left vaginal fornix and a vagina so small that it was impossible to do any sort of plastic operation through this channel.

Operation.—The lumbo-ilio-inguinal incision was made, and the abdominal flap together with the peritoneum was turned inward. The ureter was located at the crossing of the iliac artery, and since hysterectomy had previously been done I had no difficulty in freeing the duct down to the vagina. It had

been tied about the cervix uteri and hence I had a full-length ureter to transplant into the bladder. The orifice of the ureter was markedly strictured and the whole tube thickened and dilated. The ureter was split upward about one and one-half centimeters, making two lateral flaps, two chromic gut sutures were passed and the bladder incised at the point of selection. Boldt advises distention of the bladder with water to aid in selecting the point of anastomosis, but I think that this contributes towards the possibility of infection from leakage through the incision. In my cases the bladder was emptied and then cut on the point of a male sound, while an assistant made the bladder pouch at the desired point. The incision was about one and one-half centimeters long, and the edges at once grasped with forceps and held up. The needles carrying the traction sutures were then passed down through the incision and made to pierce the bladder from within out and at a point distant from the margin of the incision equal to the length of the ureteral flaps. These traction sutures were then tied and the anastomosis completed by four vesico-ureteral sutures. The wound was closed in layers and healed by first intention.

Postoperative History.—Before the operation the patient was voiding daily from her bladder about sixteen ounces of urine, and the first twenty-four hours after operation she passed thirty-four ounces. On the fourteenth day the patient was out of bed and the pyuria which previously existed had entirely cleared up at the end of three weeks. Five and six months, respectively, have elapsed since these operations, and the results up to the present time have been perfect.

Clinical Notes

ETHMOIDAL PERFORATION OF THE INNER CORNER OF THE EYE AND INVOLVEMENT OF THE ANTRUM OF HIGHMORE.*

CULLEN F. WELTY, M.D.
SAN FRANCISCO.

Patient.—C., male, aged 70, single, had always been healthy.

History.—Two weeks before consulting me he noticed a swelling over the right eye, which increased in size daily (Fig. 1). The pain and temperature also increased from day to day. Temperature was present, 104. He had never noticed a discharge from his nose. He has good sense of smell and no odor in the nose.

Examination of the Nose.—Right side, large roomy nose. Middle turbinate, perfectly healthy; middle meatus, roomy and free from pus. Olfactory fissure was free from pus. Probe puncture of the antrum of Highmore brought a large quantity of offensive and cheesy pus.

Treatment.—In order to cleanse the pus cavity, the incision had to be carried as far back as the ear. From the center of this incision another one was made at right angles extending almost to the vertex. A fistula leading to the upper, and another to the lower lid was opened at the dependent point, and gauze introduced through the fistula. Very careful search was made for the bony fistula, but it could not be found. Further operative procedure was postponed until this communication was found.

Subsequent History.—In three weeks the various incisions had healed with the exception of a small sinus that continued to discharge just above the outer angle of the eye. A canula was introduced and the wound irrigated with sterile water which came through the nose. On further search for the bony fistula it was found to be posteriorly, and above, and on the inner side of the eye. I wish to call attention to this bony fistula occurring so far back, and again to the fact that the fistula discharged at the outer corner of the eye, rather than the inner. I am not familiar with a similar case on record. This fistula was irrigated for about four weeks, but the treatment failed to bring about a cure.

Second Operation.—The Killian operation was recommended and done. The frontal sinus was full of polypi and pus. The anterior and postethmoid cells were a mass of polypoid tissue. Sphenoid cavity was full of polypi.

Result.—Convalescence was rapid. However, some pus continued to come from the sphenoid cavity and a second curettement was necessary which effectually cured the discharge. A short time after the radical operation was done on the antrum of Highmore. The outer incision closed by interrupted sutures

Fig. 1.—Showing patient before operation.

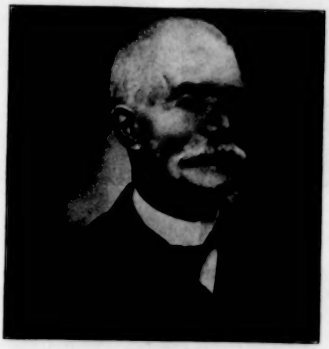

Fig. 2.—Showing patient after operation.

(Fig. 2). The antrum of Highmore was completely filled with polypi, granulation tissue and cheesy pus, which was very offensive. There had been such extensive destruction of bone that the antrum extended to the median line of the hard palate. The bone that remained of the hard palate was paper thin.

I wish to call especial attention to this case as I do not find a similar one on record in Zuckerkandl's work on "Anatomy and Pathology of the Accessory Sinuses of the Nose." Neither does Hajek.

The floor of the nose was also paper thin; was removed and at present the floor of the nose is the paper-thin bone of the under surface of the hard palate.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

The nose was free from pus in a week or ten days following this operation.

The photographs and drawings illustrate beautifully the extensive extravasation of pus, the various incisions that were made, and the pathologic lesions, as well as the cosmetic effect.

HUMAN HORNS.

WITH A REPORT OF TWO CASES.

G. L. RHODENBURG, M.D.

Assistant Attending Surgeon, Cornell University Medical College Dispensary.

NEW YORK CITY.

Cutaneous outgrowths, evidently horny in nature, have been described by many of the older writers. Aldrovandus, Lusitanus, Boerhave, Dupré and many others cite instances of this anomaly, occurring chiefly on the head. Lamprey, in 1887, published the results of his examination of the famous horned men of Africa. He found that the condition was a curious hypertrophy of the infraorbital ridge. The anomaly was congenital, and interfered with none of the body functions.

Fig. 1.

Fig. 2.

Fig. 1.—Horny growth on ear of patient 1.
Fig. 2.—Horny growth (epithelioma with horny outer layer of cells) on lip of patient 2.

Cutaneous horns may occur at any age, in almost any part of the human body, and in either sex. A few cases (four in all) have been reported as occurring in children. The majority of cases (approximately 80 per cent.) occur in people past 60. One case has been reported occurring in a person aged 93. As to the involvement of either sex, an analysis of 167 reported cases shows 97 to be in females and 70 in males. As to the frequency of occurrence in various portions of the body, the following table shows the result of an analysis of 167 cases:

Head, face and neck	83
Trunk	27
Extremities	37
Genitals	20

As will be seen, the greater number are found on the head; and of the various head regions, the forehead is the seat of preference. The eye, ears, nose, cheek and scalp have also been affected. On the trunk horns occur in the axilla, on the breast, buttock and back. Both penis and clitoris have been affected. Horns have been found on the elbows and in the palms of the upper extremity, and at the knee, and heel of the lower.

In appearance the growths are usually slightly curved and ribbed, varying in color from grey to black. In size they vary from one inch to twelve inches in length, and fourteen in circumference. The microscopic examination reveals a typical nail structure with, at times, malignant changes at the base. As far as can be determined, horns originate in one of two ways: either from what is described as a sebaceous cyst or from a wart, the outer layers of which undergo hornification. In a few cases, however, the original cause seems to have been a constant irritation, such as would ordinarily produce a patch of callous skin. In the majority of cases the horn, when removed, did not recur, but in 14 per cent. (approximate) the bases of the growths proved to be epitheliomatous in character. Aside from the disfigurement, they give rise to no symptoms and their treatment is surgical, namely, extirpation.

The following two cases show both types in contrast:

CASE 1 (Fig. 1).—*Patient.*—L. B., female, aged 74, past and family history negative.

History of Growth.—About ten years ago the patient noticed a small wart on the lobule of the left ear. This gradually grew in size, became hard and like a finger-nail. About four years ago when two inches in length it was partly removed. It again increased in size and because of the disfigurement the patient asked to have it removed.

Examination.—From the lobule of the left ear there was hanging a ribbed, dirty gray, crescent-shaped mass about two inches long and one inch wide. The base ended smoothly at the cartilaginous rim of the ear and was not indurated. The mass was freely movable over the cartilage, hard, and without sensation. There were no signs of inflammation and no enlargement of neighboring lymph glands.

Operation.—The skin at the base of the growth was incised and the mass shelled off.

Microscopic Examination.—This showed the subcutaneous fat to be normal except that the fibrous tissue was slightly thicker and that the various trabeculæ joined and penetrated the center of the horn in a thick bundle. The basement layer of epithelial cells of the skin merged gradually into the large squamous cells of the growth. There was no sharp line of demarcation. The cells of the growth were very large, long and flattened, about eighteen or twenty times the length of a red blood cell. Many contained vacuoles.

CASE 2 (Fig. 2).—*Patient.*—F. S., female, aged 50, past and family history negative.

History of Growth.—About three months ago the patient noticed just to the side of the right nostril a pimple. This gradually grew larger, but gave no pain and did not discharge or bleed. About two months ago she noticed that the top became very hard and nail-like and rapidly increased to the present size, still, however, giving no discharge either of pus or blood.

Examination.—To the right of the right nostril and one-half inch above the margin of the lip was a conical mass one inch in height, black at the upper two-thirds, dark red below. Palpation revealed a hard indurated base firmly attached to deeper structures and a hard horny mass covering the same. There were no enlarged glands.

Operation.—The base of the mass was surrounded by an oval incision and the mass cut loose from deeper structures. It could not be shelled out, being too adherent.

Microscopic Diagnosis.—Epithelioma with hornifications of the outer layers of cells.

222 West One Hundred and Thirty-sixth Street.

TWO PRACTICAL INSTRUMENTS FOR USE IN KIDNEY SURGERY.

WILLIAM E. LOWER, M.D.
CLEVELAND.

KIDNEY FORCEPS.

The difficulty often encountered in bringing a kidney into the wound for inspection or excision must be apparent to every one who has had considerable experience in kidney surgery. Heretofore no instrument, to my knowledge, has been better than the hand for delivering the kidney, but this requires in most cases a much larger incision than is necessary to deliver the kidney alone. The instruments generally used, such, for example, as the large curved hemostatic forceps, injure the organ if directly applied. In search for an instrument suitable for grasping the kidney and allowing a certain amount of tension, I discovered that the small veterinary obstetric forceps most nearly answered the purpose. From this forceps I evolved the kidney forceps, which is shown in Figure 1. The method of application is also well shown. It clasps the kidney and permits traction through a small incision without injuring the organ itself.

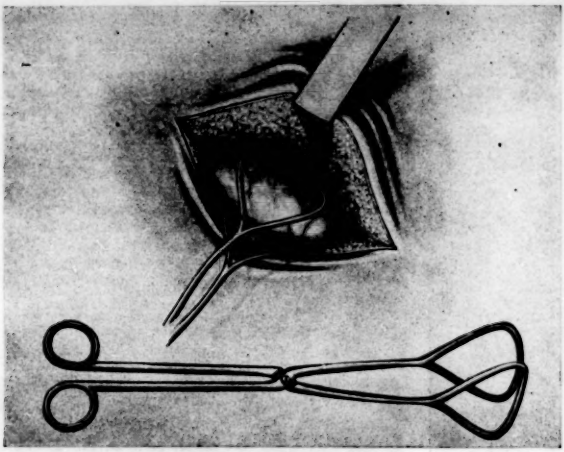

Fig. 1.—Kidney forceps.

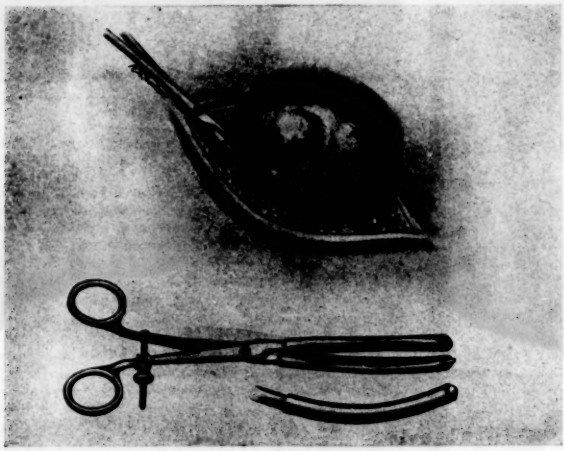

Fig. 2.—Vessel clamp.

VESSEL CLAMP.

In certain operations when it is desirable to explore the kidney I have used a vessel clamp, which is shown in Figure 2. This is an ordinary curved intestinal clamp, the blades covered with rubber tubing and a setscrew substituted for the clutch in the handle. With this clamp the renal vessels may be compressed sufficiently to shut off the circulation without injuring them, and a bloodless nephrotomy done. Compression with the fingers, which becomes tiresome if the operation is prolonged, may by this method be avoided. The advantages over a tape, the fingers, or a temporary ligature are the convenience of application, the regulation of compression by means of the setscrew, the small danger of injury to vessels, and the small amount of space required.

The exact length of time in which anemia of the kidney may be produced without injury to the organ is not definitely determined, but from experimental as well as clinical evidence the length of time required for ordinary nephrotomy may be used without any apparent damage to the kidney.

1021 Prospect Avenue, S. E.

Practical Value of Sour Milk.—George M. MacKee, in the *Dietetic and Hygienic Gazette*, states that the present use of sour milk is based on the following attributes: First, the casein has been subdivided and transformed so as to be more readily absorbed than that of sweet milk. This makes fermented milk of great value when a non-irritating, easily digested, quickly absorbed and well-tolerated food is required. Second, as a result of carbohydrate fermentation, sour milk contains lactic acid, which tends to prevent the development of putrefactive and other injurious bacteria, both in the milk itself and in the intestines. Hence, such milk is safer than sweet milk of questionable origin and purity. Third, the carbohydrates have been converted into lactic acid, so sour milk is free from sugar which makes it a valuable aliment for diabetic patients.

DESQUAMATION FROM SWEATING.

JAY FRANK SCHAMBERG, M.D.
PHILADELPHIA.

There are commonly observed in medicine manifestations of morbid processes which are deemed so trivial as scarcely to warrant description and recording. Such must be the case with the condition here referred to, for in one grade or another it is a most common affection.

Particularly during the warm months of the year, and in persons who perspire on the palms of the hands even in the cold months, there is frequently seen in these regions small rings of desquamation. The process is first observed as a pin-point-sized whitish scaling which, as a result of peripheral extension, produces an annular exfoliation of the superficial horny layers. One or more of these patches may be present. Through spreading of the margin of the peripheral scaling, neighboring rings coalesce, with the production of larger serpiginous patches (see illustration). In this manner an extensive desquamation of the palms may result. The condition is limited to the palmar and lateral surfaces of the fingers and hands. At times, however, the soles of the feet may be similarly involved.

Fig. 1.—Desquamatio sudoralis, or desquamation from sweating.

I write this communication because recently I have seen several school children who have been excluded from the public schools on suspicion that the scaling of the palms was of scarlatinal origin. Given a child who has been absent from school because of some ailment and, on resuming school attendance exhibits scaling palms and perhaps soles, the importance of excluding scarlet fever in the diagnosis of the antecedent illness is apparent. I have also seen adults who were rather alarmed by the extensive scaling of their hands. As far as I am aware, there is no description of this condition in text-books on dermatology or in contributions to periodicals.

I believe that the scaling is due to infiltration of the superficial horny layer of the skin with sweat, perhaps caused by obstructed sudoriferous ducts. The transuded sweat then seems to become absorbed and desquamation takes place. Sometimes the appearance of a pin-point-sized reddish spot precedes the desquamation. In pronounced cases small vesicles are present, although the condition is quite distinct from dysidrosis or cheiropompholyx. There are no subjective symptoms.

The condition is apparently allied to that which gives rise to sudamina, the difference in the appearances being due to the thickness and dryness of the horny layer of the palms as contrasted with that elsewhere.

As the desquamation is the conspicuous feature of the affection, and as it is convenient to have some appelation for the condition, I would suggest the name "sweat desquamation" or "desquamatio sudoralis."

1922 Spruce Street.

A PRACTICAL MILK COOLER.

H. J. GERSTENBERGER, M.D.
Medical Director of the Babies' Dispensary.
CLEVELAND, OHIO.

While trying to improve the cooling scheme in use at the farm supplying the Babies' Dispensary with milk, a cooling can was devised which has enabled us to dispense with pasteurization and sterilization during the summer. The cooling can, which accommodates a five-gallon milk-can, is made of galvanized iron No. 20. It is 22 inches high and has a diameter of 14 inches. The cover is hinged on, fits snugly, and can be locked to the can (see illustration).

About 3 to 5 minutes before putting the milk into the milk-can the can is placed in this cooler. A mixture of ice and salt, such as is used by the ice-cream manufac-

A practical milk cooler. A, milk-can; B, cooling-can.

turers, is then packed around the milk-can to the highest point which will be reached by the milk. The milk is then allowed to run from the strainer and cooler in use at the farm directly into the iced can. The milk-can cover is then put on and the cooling-can also is temporarily closed. The can is placed in a shady and cool place. After about 30 to 40 minutes the covers are carefully removed and the milk is carefully but thoroughly stirred with a clean, long spoon or other utensil. Then the can is tightly closed; if necessary, some more ice can be put around it and the cooling-can locked and shipped.

At every icing the following precaution must be observed in order to avoid getting ice and salt in the milk. After the milk-can has been placed in the cooler a "cap" is placed over the top of the closed milk-can before the ice and salt are packed around it. The "cap" is made of galvanized iron No. 26 and is 10 inches in diameter and 5 inches high. It really is a simple pan of the size

required to cover the head and neck of the milk-can. It has served our purpose well.

We have been able by the use of this cooler to prevent practically any rise in the bacterial content of the milk from the time it leaves the strainer. About 30 minutes after the milk has been put into the cans and cooled in this manner, the temperature will be 50 F. or below and will remain so for from 3 to 5 hours. About 25 to 35 pounds of ice are required to cool five gallons of milk efficiently. The salt used costs $7 per ton.

If the cooler in use at a farm lowers the milk to about 45 F., it may be possible to keep the temperature below 50 F. by simply packing the can in ice without salt. By a little experience one can soon learn—using the thermometer—whether ice alone or both ice and salt, and whether much or little of one or the other, is necessary to get the low temperature desired. This simple apparatus gives every farmer the means of cooling his milk to 50 F. or below at a reasonable cost. As soon as the weather is cooler less ice and salt must be used or the milk will be frozen, as has happened once in our experience.

NAILING THE LOWER EPIPHYSIS OF THE RADIUS.

REPORT OF A CASE.

H. A. HAUBOLD, M.D.
Clinical Professor in Surgery, New York University and Bellevue Hospital Medical College; Surgeon, to Harlem Hospital.
NEW YORK CITY.

The case here reported was diagnosticated before the skiagram was submitted, as it presented no great problem. The one point which ultimately resulted in a favorable outcome, however, was brought out by a study of the skiagram and the measure for relief decided on.

History.—C. N., aged 15, was admitted to Harlem Hospital, July 6, 1908, with a history of having fallen from a rapidly moving trolley car. In an effort to save himself he held the right hand forward and the force of the fall was received on the palm. The ambulance surgeon who saw the boy soon after the injury diagnosticated a fracture of the lower end of the radius with lateral displacement. The boy had also sustained a small scalp wound and some minor contusions. The latter were of little import, however, and after an unsuccessful attempt at reduction of the deformity at the forearm the patient was admitted to the hospital.

Examination.—After the members of the house staff and I had made an examination and a second attempt at reduction by manipulation was made, the forearm was skiagraphed by Dr. W. H. Stewart. The results are shown in Figures 1, 2 and 3. Figure 1 shows the lower radial epiphysis displaced to the radial side and a small portion of the shaft of the bone carried with it. The case was regarded as one of epiphyseal separation with lateral displacement, and after the second attempt to effect reduction had failed the patient was anesthetized and a forcible attempt at reduction made. This proved ineffectual, however, despite the fact that the limb was placed on a sandbag and the lower fragment sharply struck with a mallet.

Close study of the skiagram led to the conclusion that the displacement was the result of the pushing of the lower end of the shaft toward the ulna, and that this, rather than the radial displacement of the lower fragment, was the cause of the deformity. This view was strengthened by the over-lapping of the radius on the ulna. It is this point which emphasizes the value of skiagraphy in this class of cases.

Treatment.—On July 10, 1908, a curved incision with the concavity downward was made over the radial side of the fracture and the flap turned downward. This incision was made to obviate the presence of the scar at the site of the

Fig. 1.—Skiagram showing radial epiphysis displaced to the radial side and a small portion of the shaft of the bone carried with it.

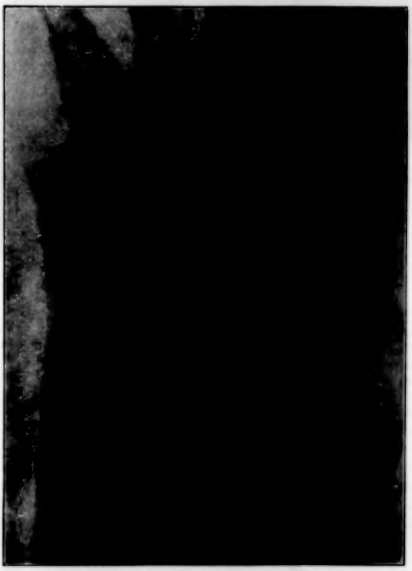

Fig. 2.—Skiagram showing the detached fragment nailed to the shaft of the bone.

bone trauma, a desirable accomplishment, and one which should be employed whenever feasible. A stout tenaculum was hooked around the lower end of the shaft of the bone and by traction brought into apposition with the lower fragment. The deformity, however, recurred as soon as the traction was released. A steel nail one and a quarter inches in length and a sixteenth of an inch in diameter was then driven through the fragments in the manner shown in Figure 2. This effectually prevented recurrence of the deformity. The nail was forced into place with a steel, lead-covered mallet. The limb was then encased in a plaster-of-Paris cast through which the negative shown as Figure 2 was taken. The position of the hand is also shown here. It will be noted that the deformity was not entirely overcome at the end of the operative procedure, but that when union was complete the slight over-riding was entirely corrected. No doubt the position of immobilization is responsible for the additional correction, as shown in Figure 3. The nail was removed at the end of three weeks and the limb immobilized, leaving the wrist joint free. A Pagenstecher thread had been placed around the head of the

Fig. 3.—Skiagram showing anatomic result of treatment.

nail and brought out through a small incision in the skin flap immediately over the head of the nail, with the view, ultimately, of extracting the nail by this avenue. The thread was broken in the attempt, however, and it was necessary to withdraw the nail with a slender forceps. This presented no difficulty. The functional result is perfect. The anatomic result is shown in Figure 3.

As a general proposition the operative treatment of fractures is not widely employed, nor is this case submitted with the view of encouraging the indiscriminate employment of the open treatment of fractures. It is offered, however, as showing what the possibilities are when deformity can not be overcome in the usual manner. The danger of infection need only be borne in mind to forestall its occurrence.

15 West Eighty-eighth Street.

EAR SPECULUM WITH HANDLE.

EMIL AMBERG, M.D.
DETROIT, MICH.

In dressing through the enlarged outer ear canal the cavity created by the radical operation for the cure of chronic middle-ear suppuration I have found the ear speculum with a handle very useful. The accompanying illustration shows a modified Boucheron ear speculum. The distal end is shortened and a handle is attached to the rim of the funnel. The end of the handle is hooklike and can be held either with the

Modified Boucheron ear speculum, natural size.

thumb and the second finger, or, with the second finger alone by bending the same, or, with the third or the fourth finger. In the latter instances some of the fingers are disengaged and can be used for other purposes. The length of the instrument is about 7.5 cm. (3 in.). The handle is about 1 cm. (⅜ in.) wide.

270 Woodward Avenue.

Special Article

MEDICAL INSTITUTES.

HOW THEY ENTRAP THE UNWARY YOUNG—THE HIBBARD CASE AS AN ILLUSTRATION.

If the United States Circuit Court of Appeals sustains the findings of the lower court, Edward R. Hibbard of Oak Park, Ill., will spend two years in the Chicago House of Correction, besides paying a fine of $1,500 and the costs of the prosecution of his case.

Mr. Hibbard is a man who has been a prominent citizen of Oak Park and whom Edward F. Dunne, former mayor of Chicago; William A. Hutchinson, postmaster at Oak Park, Frederick H. Wickett, attorney at law; C. F. Raffner, member of the Cook County Civil Service Commission, and others have regarded as a good citizen and a good neighbor. As to his general reputation for honesty—"It was good; it was very good." In fact, he was a neighbor to be proud of (so these people thought), and yet it is alleged (and the lower court found him guilty) that while Mr. Hibbard was posing as a model citizen and a bright and shining example for the Sunday-school-going youths of Oak Park, he was running a so-called medical institute, which bore two names because it had two doors, each of which opened on a different street.

TWO NAMES—ONE INSTITUTE.

One door was the entrance to the "Boston Medical Institute," the other the entrance to the "Bellevue Medical Institute." Both "institutes" occupy the same suite of rooms, both have the same managers, the same physicians and the same object.

That object is advertised as the "medical treatment of the private diseases of men"; but the evidence submitted to the United States attorney at Chicago was such that the grand jury found that the object of said institutes was to obtain

money through the mails by means of fraudulent pretenses. Government exhibit 69 is a letter from the Boston Medical Institute guaranteeing the reliability of the Bellevue Medical Institute, and correcting a rumor that the latter institution was poor pay.

The modus operandi of this concern was on a par with similar institutes. Pamphlets—a million copies a year—with titles such as "The Army and Navy," "Vim of Life," "Perfect Manhood," etc., have been scattered broadcast, in farmers' wagons, buggies, etc., under the cushions on seats when possible, where they would be most likely to attract the attention of boys and young men. The most adroit one of these was first mentioned, which purports to give statistics comparing the Army and Navy of the United States with those of other great powers, but which contains articles on "Unnatural Habits," "Insane Asylums," "Lost Manhood," "Spermatorrhea," "Impotency," "Varicocele," "Gonorrhea," "Syphilis," "Specialism in Medicine," a notice about the "Boston Medical Institute," 152 Lake street, Chicago, "the oldest medical institute in the country," and a choice collection of "sworn testimonies" (unsigned) from grateful patients whom this institute had kept from filling untimely graves or from becoming inmates of asylums for the insane.

"The pitcher which goes too often to the well shall at last be broken." Since 1869 the "Boston Medical Institute" had been doing a most successful (financially) mail order business; but finally it undertook to "cure" one Albert Hermann, of Ann Arbor, Mich., and did not succeed; whereupon Albert Hermann claimed the return of his money under the "guarantee" of the institute, and when he found he could not get it he was ready to take action in lieu thereof.

Hence it was that on the nineteenth day of October, 1907, the United States grand jurors, inquiring for the eastern division of the northern district of Illinois, found that Edward R. Hibbard, under the name and style of Boston Medical Institute, "had devised a scheme and artifice to defraud one Albert Hermann."

Similar charges were brought against Mr. Hibbard on account of his dealings with J. W. Sylvester and Lawrence Clary, Spencers Station, Ohio. Hibbard was admitted to bail in the sum of $2,000. The recognizance was filed Oct. 22, 1907. On the second of November Edward R. Hibbard filed a demurrer. The case came to trial on the twenty-fourth day of March, 1908. On the fourth of April the jury found Edward R. Hibbard guilty as charged in the indictment.

MEDICAL STAFF.

Some interesting facts about the "Boston Medical Institute" were brought out at the trial. In correspondence with the "patients" Hibbard represented that he had a medical staff of eleven members, "including some of the most eminent physicians of America and Europe." But the testimony of Dr. S. E. Embry, who was engaged by a Mr. Ward (advertising man for the Boston Medical Institute) to make an investigation and report of said institute, brought out the fact that when Dr. Embry visited the institute there were two doctors there—Dr. Edmondson and Dr. Koehn. Dr. Gilbert W. Edmondson testified that he was a graduate of the College of Medicine, Louisville, Ky., had attended the Indiana Medical College, Indianapolis, and that he was employed as medical superintendent by the Boston Medical Institute. In the course of the trial it was brought out that Dr. Edmondson "is shown by the investigations of the inspectors to be a man of mediocre ability, who is not recognized as a specialist and is without standing in his profession." Concerning Dr. Koehn the following statement was made: "The only other physician connected with the institute in any way whatever is a Dr. Koehn, who feels so with reference to the business that he will not permit his name to be in any wise publicly used in connection with it, and who gives not to exceed half of each day to analyzing such specimens of urine as may be submitted by patients. The value of his services in this regard can be appreciated from the fact that he admits 'analyzing' twenty and more specimens in the half day devoted to the institute"

CORRESPONDENCE.

Government exhibit 38 is a picture of the "correspondence department" of the Boston Medical Institute, "nearly 3,000 square feet," and one of the clerks testified that he had seen twenty men at work. The report of the postmaster shows that the mail received by the institute averaged 250 letters a day, and yet the testimony of the clerks and stenographers proves that the instructions for the answers to these letters, and therefore the treatment of all the patients, were received from Dr. Edmondson. The bookkeeper and cashier, Oscar A. Kempe, testified that the receipts of the institute were from $4,000 to $5,500 a month. The average fee from each patient was $7 a month. It is therefore probable that an average of nearly 700 patients a month were treated, and all by Dr. Edmondson.

LABORATORY.

One of the most taking catches of the advertisements of the institute, aside from the fictitiously large consulting staff, was that in regard to the laboratory. This was represented as "the most complete and extensive in the country, containing all of the latest discoveries known to science." The indictment sets forth that the laboratory was not the most complete in the country, and that it did not contain all the latest discoveries known to science.

Also the Boston Medical Institute advertised: "Our medicines are prepared to meet the symptoms in each individual case, in our extensive laboratory, by skilful and experienced chemists, thereby avoiding the mistakes so often made in compounding by incompetent druggists or their overworked clerks. The greatest care is exercised in the purchase of pure and unadulterated drugs and chemicals."

HOW THE MEDICINES WERE PREPARED.

Charles A. Jessamine, called on behalf of the government, testified that he was a shipping clerk. He had been a sailor. Jessamine entered the employ of the Boston Medical Institute as a shipping clerk. But when Jessamine described the compounding of drugs in the laboratory the following testimony was elicited:

Q. Who selected the medicines and put them in the tub?
A. I did this.
Q. Under whose instructions would you do this?
A. Under the doctor's instructions.
Q. Would you do this when he was not there at any time?
A. He was in the room when he told me, but he would step out and I would do it.
Q. What would you have to guide you in making the proper mixture?
A. The drugs were mixed when we got them.
Q. Now, in making the compound, that is saturating it with alcohol and water, what directions would you have?
A. That was specified at all times, a certain amount for each particular drug.
Q. What shape were those directions in?
A. They specified to me to use 33 per cent. alcohol for a certain drug, and it was an understood fact that was what I had to use.
Q. Would you go to the bottles and pour out the alcohol, 33 per cent?
A. Yes, sir.
Q. Would you do that when the doctor was not around?
A. Sometimes he would be in the room, and sometimes he would be just stepping out.
Q. What kind of medicines were those that were used for the tub?
A. Saw-palmetto compound, black willow bark, and trifolium compound.
Q. Did you ever take any drug and put it into the tub and mix it up when the doctor was not there?
A. Yes, sir, I have.
Q. What guide would you have to go by in doing that?
A. All three kinds was marked by different numbers.
Q. How would you know whether you got the right drug or not?
A. It was very hard for me to get the wrong kind.
Q. What enabled you to determine whether it was the right kind?
A. They were marked inside and I could pull the box out and see which mark was on the one wanted, "X," "D," or "M."
Q. You depended entirely on the marks, did you?
A. I could depend on the results and smell.
Q. Have you ever studied pharmacy?
A. No, sir.
Q. Have you ever had any experience in a pharmacist's place?
A. No, sir.
Q. Did you ever take any special instruction under Dr. Edmondson in pharmacy?
A. No, sir.
Q. Were you during the time you worked for the Boston Medical Institute ever a registered pharmacist?
A. No, sir.
Q. During the time that you were working there, nearly four years, was there ever a registered pharmacist in that laboratory?
A. Not to my knowledge.

Q. And you say that you were the chief chemist there?
A. I didn't say that at all. I didn't say there was any chemist at all. The doctor—there was no chemist there.
Q. It says here: "Our prescription department, chief chemist and two assistants." Now who is the chief chemist?
A. It must have been the doctor.
Q. Who were the assistants?
A. I was assisting him. I was not the chief chemist.
Q. Who was the other assistant?
A. The boy Swanson. He was not a chemist. There was no one there to my knowledge that was a chemist. I could not swear whether the doctor was a chemist or not.

VALUABLE INVESTIGATION.

Judging from the developments at the trial, it was apparently the custom of the managers of the Boston Medical Institute to employ any one available to do whatever was to be done, regardless of the fitness of the person employed. For instance, when it was deemed advisable to have the institute and its "consulting staff" "examined," the advertising man for the institute secured the services of a Dr. S. E. Embry. The institute treated specially the diseases of men. Dr. Embry testified of himself as follows:

"The nature of my practice has been general practice and surgery. Since I have been in Chicago my practice has been principally corporation surgery." Nevertheless Dr. Embry went through the Boston Medical Institute and "examined" Dr. Edmondson as to his fitness for his position with the institute. The cross-examination of Dr. Embry brought out the following information as to his qualifications for the services he rendered to the institute:

Q. You do not seem to be well posted and fresh on the anatomy of the genital organs, do you?
A. Not particularly, no, sir.
Q. You do not claim to be an expert on that subject, do you?
A. I have never claimed to be an expert.
Q. You spoke of reading authorities on the subject of masturbation and night emissions. What authorities have you read on that subject, doctor?
A. Charles Dana of New York. He was a specialist in nervous and mental diseases, and a neurologist in some of the hospitals there, and a visiting neurologist at the Bellevue and some other hospitals there.
Q. Have you read any of his works on that subject?
A. I read one.
Q. Where did you read that, doctor?
A. Oh, I have read that book for some time. I don't just remember that.
Q. Where did you read it, if at all?
A. Well I think I looked up that book or was reading it. It seems to me like some time after I made the investigation of this concern. I just happened to think to look up masturbation.
Q. To look it up to be ready for this case?
A. Not about this case for I have not seen it lately. I remember going into a case somewhere, in Michigan I think it was, and I read up the case a little bit, only a page or two though, and that is all.
Q. What is the title of that book?
A. It is General and Nervous Diseases—that is, it is a book on nervous diseases, nervous and mental diseases. "Nervous and Mental Diseases" is the title as well as I remember it.
Q. Does that make a specialty of genital diseases?
A. That book makes a specialty of nervous diseases in its various forms.
Q. And is it not wholly a specialty on the subject of sexual neurasthenia?
A. I don't think there are over two pages in it that deal on that.
Q. Then all your authorities on this one subject, the subject of these genitourinary diseases is the two pages in Dana's work? Now, doctor, I mean to come right down to the authorities that you have referred to here a half dozen times—you say, the authorities say so and so.
A. I can not name any others.

PECULIAR ANATOMY AND PHYSIOLOGY.

Dr. Embry's answers to questions dealing with the anatomy of the genitourinary organs were peculiar—for instance:

Q. Remember this, doctor, in these questions that I am asking you now, that I am asking you about a perfectly healthy, normal boy, and if the semen is manufactured as you say in the testicle, then you say it goes directly from that to the urethra?
A. It goes into the urethra. That is it must have a channel, that is the way it is supposed to go.
Q. Is there any other channel?
A. No, sir, not unless it is absorbed.
Q. Is it ever absorbed, doctor?
A. Well, if it gets into the stools it has to be.
Q. How does it get into the stool?
A. It has got to be through absorption by the rectum.
Q. That sometimes occurs does it, doctor?
A. Yes, sir, when it is found in the stool it is. There is no other channel for it to go through.
Q. But it is sometimes absorbed into the rectum?
A. Yes, sir, where there is considerable or constant waste of it.
Q. You have known of such cases, have you doctor?
A. I couldn't say that I have examined such cases.
Q. Did you ever read of such cases?
A. Yes, sir, that is, I have read of it being found in the—that it could be found or is found in the stool.
Q. And did you ever read in any medical authority or work that where it is found in the stool it goes from the testicle into the rectum?
A. No, sir, I didn't read that, but then I know anatomy, that there is no other channel, no way for it to get through except it is absorbed.
Q. So your reasoning is that where the semen is found in the stool it is absorbed into the rectum?
A. Yes, sir. That is the only way that I could see how it got there.
Q. Do you know of any place where semen is stored in the human anatomy?
A. None, except in the testicles.
Q. There is no vesicle or bladder anywhere in which it is stored except in the testicles?
A. That is all I remember of. I am not as fresh in my anatomy as I was six or eight years ago when I was in school.
Q. And you have never made a dissection of that part of the anatomy?
A. No.
Q. Does the testicle act like a rubber bulb in dilating and contracting to expel the semen?
A. I don't know that I ever saw one acting; I couldn't tell you.
Q. Did you ever hear of such a thing as a prostate gland?
A. Well, I have certainly heard of them.
Q. Where are they?
A. The glands that surrounds the root of the penis.
Q. What are they for?
A. They are part—they are the glands that surround the neck of the bladder and the root of the penis.
Q. What is their function?
A. Well, to produce—just like any other glands; it produces secretions.
Q. What is the secretion that they produce?
A. I don't know that I could define it to you exactly.
Q. Where did you get your information, doctor, on this general subject of semen and how it is produced and what is done with it and what becomes of it and all about the subject that you have been testifying about?
A. From books on general anatomy and physiology and other books.
Q. What books?
A. I don't remember the books, sir, all of them that I have read.

THE VELVET GLOVE.

The institute seemed to have had a regular set method of dealing with the unwary flies which fell into its trap. One of the complainants in the case against E. R. Hibbard, as representing the institute, was a J. W. Sylvester, Racine, Wis. In his complaint it is shown that when he was about 19 or 20 years old he was influenced by the advertising literature of the Boston Medical Institute to seek treatment from it, through the mails for occasional night emissions. Such a condition in a healthy young man of the age of Mr. Sylvester at that time is entirely normal. This concern, however, represented to Mr. Sylvester that he was in a serious state, suffering from sexual debility and in need of immediate and the most skilled attention. Quoting the language of the concern to Mr. Sylvester, he was advised that his case had been carefully considered by the institute staff of specialists, who had decided that he was suffering from "spermatorrhea, passive congestion of the kidneys, partial impotency and nervous debility," and he was informed that unless he speedily obtained "energetic and well-directed treatment, the inevitable result will be not only a breakdown of the general nervous system, but a complete extinction of the sexual powers themselves." He was further told: "We are pleased, however, to state that, if you at once begin an efficient medical treatment, we do hereby absolutely *guarantee* your ultimate restoration to perfect health or refund every dollar paid to us in fee, and it is our belief that the same can be brought about in from two and one-half to four months."

Services and medicines were offered for $10 for the first month and $8 for each of the succeeding months.

Mr. Sylvester testifies that he treated with this institute for twenty-three months, and at the end of the time his health was completely wrecked, and he was compelled to go to his physician for attention. Mr. Sylvester testified that altogether he paid the institute more than $150. He finally became convinced that the institute was not curing him and was only injuring his health and securing more money from him without giving him any real benefit. He therefore demanded the return of his money in accordance with the promise and guaranty made to him that, if he was not cured, his money would be refunded. The letter of the company written him in reply to this demand, refuses him his money under the pretext that he had not been guaranteed a cure in any definite time; and despite the fact that the institute had been handling his case for nearly two years, it had the audacity to suggest that it could ultimately cure him if he would indefinitely continue treatment.

THE HAND OF IRON.

When Sylvester attempted to press his claim for the return of his money he was advised that his "scurrilous, defaming and blackmailing letter" would be placed in "the hands of our attorneys to prosecute you to the full extent of the law."

Dr. Robert A. Kitto, Racine, Wis., whom Sylvester consulted after discontinuing treatment from the institute, testified that when Sylvester came to him he was "very nervous and debilitated. He was in what we call a hypochondriac condition. That is, he was largely imaginary, worrying, and very weak, emaciated and pale. My treatment of him was tonic and advice. I advised him not to worry about his condition, that it was not as bad as he supposed it was, and it was a good deal of imagination, and that was working on his mind, and his mind was working on his body, and that made him feel as he did, when in reality he was not diseased, as he imagined he was. I gave him very simple tonics, what we call tissue medicine, or building medicine. I treated him about three or four months, I think, constantly. When I got through I considered him all right. He had been cured at that time.

EFFECT OF SUCH LITERATURE ON THE IGNORANT YOUNG.

The case of Mr. Sylvester seems to illustrate a point made by Dr. Harold N. Moyer, of Chicago. Dr. Moyer was asked the following question:

Q. I will ask you to state in your opinion, doctor, what the effects the sending of such a pamphlet as "Government Exhibit 16," entitled "Perfect Manhood," to an inexperienced and ignorant boy or to a boy who had not seen a great deal of the world, who had not had much experience, who had had nightly emissions occasionally and had practiced self-abuse somewhat, what effect, in your opinion, would the putting of such a book as that in the hands of such a boy have; or the sending of it to him or the distributing of it to him—I don't mean the giving of it to him by his father—but picking it up on the street, or finding it at a picnic, or having it put in his wagon, a farmer's boy, while he was in town, and picking it up secretly—secretly reading it?

A. I think the effect would be to cause a nervous condition in that person and I think he would have nervous troubles develop ing from it, because it would create a disease in him or a mental disease in him that did not exist. He would think he had something the matter with him which he did not have. That is what I think would be the effect of such teaching as this book contains.

Q. I will ask you what, in your opinion, would be the effect on such a young man or boy after reading that book to get into correspondence with the Boston Medical Institute, which was distributing it, and after having corresponded at a distance with the institute for several months, and taking those medicines and writing his symptoms on blanks that were sent to him for that purpose, and keeping that up for several months and paying the money monthly, what would you say would be the effect on a boy of that kind, of that kind of treatment?

A. I would say that would tend to keep up the nervous condition, and that it would impair such a person's health.

THE HERMANN CASE.

Albert Hermann, another of the complainants, had an experience similar to that of Mr. Sylvester. When Albert Hermann was "going on 17 years" he lived in Ann Arbor and was an organ maker who was doing a full day's work every day. He testified that "the condition of my health prior to January, 1905, seemed all right except that I had bad habits." It was brought out in the cross-examination that Mr. Hermann had practiced self-abuse for a year and a half. At the time Mr. Hermann began the practice he did not know anything of its effects. When he found out that it was a "bad" habit he "gradually slowed down," and at the end of six months discontinued it.

One day, near the Ann Arbor depot he picked up a Boston Medical Institute pamphlet—"Our Army and Navy." Mr. Hermann testified: "I read every word of this pamphlet through. I commenced to think about it, and I thought I was very sick, and I cut out the question blank and sent it to the Boston Medical Institute." Mr. Hermann had nightly emissions "about once in every two weeks." At this time the practice of self-abuse had been discontinued. The Boston Medical Institute pretended that he was in a most serious state, was suffering from sexual debility, and required immediate and skilled attention. He took the treatment for about seven months in 1905 and for about three months in 1906. He alleges that as a result his digestion was ruined, and that because of the treatment he was compelled to obtain the attention of a local physician.

INDUCED TO PROLONG TREATMENT.

The letters which he received from the institute while under treatment were all of a character to induce him to prolong the treatment. The treatment commenced Jan. 25, 1905. In March he was advised: "Greatly pleased with progress—we are greatly interested in your case." In April: "Trusting that you will continue to manifest a hearty good will in cooperating with us—especially interested in case—our entire board of physicians following your progress." In June: "Sorry you feel discouraged, and we assure you that there is no reason whatever for you to do so—it would be nothing short of criminal to quit now." In July: "We are pleased with the continued improvement in your condition, and can assure you that you are improving nicely."

About this time Hermann became discouraged and dropped the treatment, but in December, 1905, was induced to take it up again by the representations of the institute that "we do absolutely guarantee that our treatment will check all unnatural losses and restore the organs to their natural size, strength and vigor, and as a result of such vigor you will certainly feel like a new man in three months." In January, 1906, he was informed that "we are greatly pleased with the progress made thus far." In March, 1906: "Although your improvement is quite slow, it is steady."

THE INSTITUTE SHOWS THE CLOVEN HOOF.

Hermann finally became convinced that instead of curing him the institute was seriously endangering his health, and ceased the treatment and applied for the return of his money, in accordance with the company's guarantee. He was advised that the company had never guaranteed to cure him in any certain time; also that he had not been promised that all of his money would be returned, but that only the institute fee would be refunded, if he was not cured, and that this fee was only "10 per cent. of all you paid us." The institute refused to return even this, pretending that it had not failed to cure him. He was further advised: "Let us tell you now that if you cause us any trouble about this matter, or try to do so, we will have good grounds against you for slander and defamation of character. We do not wish to get into any trouble with you about the matter, but if you persist in it and bring it on yourself, we are sure that we shall defend ourselves to the limit, and we will show that at the time you began the treatment you were practicing these secret masturbation habits. We will also have something to say along other lines when you are done with all you wish to do—we will show you that this very letter in our possession to-day on this subject is a ground for blackmail on your part against us."

This threat publicly to expose the weaknesses and infirmities of patients, given in professional confidence, is in strange contrast with the assurance printed at the top of each letter: "All correspondence strictly confidential."

ATTEMPTS TO SECURE RETURN OF CORRESPONDENCE.

The correspondence between the institute and patients, submitted with the complaints to the Postoffice Department, shows the significant fact that the institute had endeavored to obtain the return to it of all its correspondence to patients by printing on the reverse side of its letters forms for the patients to fill in and return to the institute, reporting the progress of their cases. This practice of the company would seem to indicate that they recognized that the matter desired to be returned was of an incriminating nature. This is plainly shown by the cases discovered by the inspector, in which money was paid by the institute for the return of its correspondence, which it had failed to obtain by the first-mentioned method.

In the case of Augustus H. Wright, Harrisburg, Pa., the Boston Medical Institute wrote him July 3, 1906, in part as follows: "We wish to settle that trouble and have no more to do with you. Will pay you the $40 you ask if you will comply with the following conditions, and send us an express C. O. D. for the $40. In the package we wish you to place *all* the letters, pamphlets, clips, etc., that were ever sent you, including the *two* sheets of the letter of diagnosis

and terms first sent you; also sign the enclosed statement with your full name, and date it, and give us the privilege of examination before paying the C. O. D., and we will pay it if all these things are in it."

STOCK DIAGNOSES.

For the purpose of testing the skill and honesty of the business as regards the diagnosing and treatment of cases, the inspectors caused three test letters to be sent to the Boston Medical Institute, and the results are given as follows:

1. T. M. Moran, Canton, Ill. In this case the inspectors, after opening correspondence with the institute as from a regular patient, submitted symptoms of a plain, uncomplicated and patent case of hydrocele. This is a condition recognized by all reputable practitioners of medicine as amenable only to surgical treatment. The institute, recognizing it could give no service of value through the mails for the hydrocele, falsely pretended that the condition was "sexual neurasthenia," a term that covers a great many ailments and diseases; as, for instance, "nervous debility or general weakness of the nervous system, peculiar pains and aches in different parts of the body, tired and exhausted feeling, and so forth." None of these symptoms were given by the patient; but the patient was assured that the institute could cure the condition diagnosed in from two and one-half to four months, and urged the party to take treatment at $12 for the first month and $8 for each succeeding month.

2. John B. Gardner, Brookfield, Mo. In this test the inspectors submitted symptoms showing a plain, uncomplicated and patent case of varicocele, which is also a condition recognized by all reputable physicians as amenable only to surgical treatment, if any be required. In this instance the institute wrote: "The physicians connected with our institute have to-day given your case their attention, and, after carefully considering the description of your condition, find you to be suffering from sexual neurasthenia, falsely called spermatorrhea," and urged the patient to take treatment from the institute for $12 for the first month and $8 for each month thereafter, under the promise: "We do hereby absolutely guarantee your ultimate cure for the trouble diagnosed or refund to you every dollar you have paid us in fee, and it is our belief that your cure can be accomplished in from two and one-half to four months." This diagnosis is on a printed form, which shows its general use, and also contains the following statements calculated to create a condition of fear in the mind of the patient: "We also desire to add that we do not regard your trouble as especially dangerous to your life at present, or desire to frighten you in any manner or exaggerate your complaints, but at the same time we do regard them as dangerous to your sexual health and happiness, if you allow them to go unchecked, for these troubles are progressive and demand immediate treatment, which we are prepared to give."

3. E. J. Robb, Aurora, Ill. A test similar to the Gardner test was conducted under the name of E. J. Robb, the inspectors submitting a plain and uncomplicated case of varicocele, and receiving the same stock diagnosis in answer thereto.

FRAUDULENT PRETENSES OF INSTITUTE.

These tests show affirmatively that it was the practice and intent of this institute to endeavor to obtain money from the unfortunate by falsely and fraudulently pretending that it could treat them through the mails successfully and thereby inducing them to purchase treatment, although it knew it could give no treatment of value by mail for the conditions from which they were suffering. The recognition that the institute could give no services of value in the test cases conducted by the inspectors is not only patent from the cases themselves, but was conceded by Mr. Hibbard, the manager and proprietor of the business, in his written answers to questions propounded to him by the inspectors with reference to these cases.

The facts disclosed by the Sylvester, Hermann, Wright and other complaints show that the promises given by this institute to secure patients: that in case of failure to effect a cure all money paid will be refunded, are not made in good faith or honestly, but are held out fraudulently and without any intention on the part of those conducting the business to fulfill them; but rather that the intention was to refuse to return the money, to make such requests matters of controversy, to claim that such requests were blackmail, to threaten public exposure of patients, to claim that no time was absolutely specified and that therefore there could be no claim for a refund, to claim that the promise was not that all the money would be refunded, but only the fee.

Concerning this last point, it is interesting to note that to the inspectors' question as to what he meant by the statement in his letters, "We absolutely guarantee to cure or refund every dollar paid to us in fee," Mr. Hibbard answered "We meant all money paid—every cent."

The inspectors asked Mr. Hibbard to cite instances in which the money of uncured patients had been refunded. Mr. Hibbard declined to do so, and gave as his reason that the names of patients were held confidential. The government exhibit of letters threatening patients with public exposure is in startling contrast to this statement.

An interesting feature of the trial was the fact, which was made evident, that there are physicians, who desire to be known as good and regular practitioners, who for solicitation and hire will defend such an institution as the Boston Medical Institute was proved to be, and, furthermore, one of these men testified that he believed the effects of distribution of such literature as that sent out by the institute was good. There were submitted affidavits from four physicians who claimed that they had conducted an investigation of the affairs of the institute and expressed it as their opinion that it was an honest and not a fraudulent business. But even they had the grace to condemn the "unprofessional" methods of the company in soliciting business.

TESTIMONY OF PHYSICIANS FOR THE DEFENSE.

One of these witnesses was George J. Tobias, who testified that he was a graduate of the College of Physicians and Surgeons of Chicago, class of 1885; that his first year of practice consisted of dispensary work and some work at the Dunning Insane Asylum; he was then in general practice until 1889, and from 1889 to 1904 was physician to the claim department of the North and West Chicago Street Railway companies; he handled during that time about 2,000 cases of street-car injuries; and after that time did largely an office practice; in 1895 he was graduated at the Kemp College of Law, and was appointed to the chair of medical jurisprudence and taught five years; subsequently lectured two terms at the College of Physicians and Surgeons on the same subject; and later taught for two years in the Chicago College of Medicine and Surgery, in the chair of practice; he had made a study of the genital organs in a general way as a general practitioner does; and had dealt to a certain extent with masturbation and seminal losses; he believes the effect of masturbation on the physical condition of a young man to be harmful; the habit filthy; that it causes shock to the nervous system; a loss of fluid; unnatural excitation, stimulates impure thoughts, and may become a fixed habit; the habit is bad, although it is more or less universal; it lowers the vitality, tells on the mental and nervous system, and the general vitality suffers.

In reply to the questions as to the examination he made of Dr. Edmondson, Dr. Tobias testified that he went into the inner office and asked Dr. Edmondson in a general way as to his credentials, and on receiving the answer that he was a graduate, asked if he was familiar with general practice, and stated in brief that the examination of Dr. Edmondson was full and complete. Objection was made, and sustained by the court, to the question whether, in Dr. Tobias' opinion, Dr. Edmondson was competent to diagnose correctly a case of a man suffering from the effects of masturbation and seminal losses.

THE DRUGS EMPLOYED.

Dr. Tobias further testified that he saw the room in which the drugs were contained; that he found a list of remedies from 2 to 97, and a number that were not numbered. Among

the formula was a sedative mixture containing assafetida extract kola nut, zinc phosphid, extract nux vomica, extract hyoscyamus; formula 3 was an alterative containing iodid of potassium, syrup of iodid of iron, chlorid of mercury, arsenic tincture and nux vomica; formula 4 was diuretic, containing extract of buchu, corn silk, hydrangea and bicarbonate of potassium; formula 6 contained Blaud's mass, cascara sagrada, gentian, nux vomica and capsicum, and is a good nerve tonic and excellent in cases of alcoholism; formula 13 was composed of methylene blue, which is used in gonorrhea to render the urine alkaline; formula 14 contains copaiba, cubebs, sulphate of iron, oil of sandalwood and Venice turpentine. This formula is a favorite among genitourinary specialists in the treatment of specific urethritis. He found a large number of formulas on record, enough to take care of any line of diseases met with in chronic work. He did not make the analysis of pills or tablets, but had reason to believe that they contained what the formula stated; he took the lids off the large tin boxes, and the glass stoppers out of glass receptacles to see whether the fluids were fresh, and found that they were in good condition. The dispensary of the institute, he testified, was far superior in equipment to that of the dispensary of the College of Physicians and Surgeons; he saw no card displayed in the laboratory or dispensary, showing that a registered pharmacist was in charge, and considered the absence was due to the fact that their institute was dispensing remedies already prepared by special formulas and put up by houses like Parke, Davis & Co., with formulas on the containers.

Albert A. Lowenthal testified as follows:

I am 34 years of age; profession, physician; have been for 13 years. I have made a specialty of insanity and nervous diseases for twelve years. I am medical superintendent of the Riverview Hospital at Kankakee. The patients there are nervous patients. No insane patients at that institution. I am professor of nervous diseases at the College of Physicians and Surgeons and at the Jenner Medical and I had the chair on nervous and medical diseases at the Dearborn Medical. I was formerly physician at the asylum at Kankakee. I was on the active and advisory staff of the Cook County Hospital. I was clinical instructor first for the College of Physicians and Surgeons for three years and now I am adjunct professor of nervous and mental diseases. I am connected with societies; I am a member of the county medical, the state and national, and of the Physicians Association of the Insane Asylum.

Q. What is your opinion of the effect of masturbation on the physical condition of a young man who is practicing masturbation.

A. If he is a persistent masturbator it certainly has a bad effect.

Q. What possible bad results can result from masturbation?

A. Everybody is given a certain amount of nerve force; if he abuses that nerve force either by excitement, grief, masturbation or otherwise he will run out of nerve capital and there will be a nerve deterioration, and usually the nervous system breaks down first on account of the finer texture.

Q. Then what might happen deleterious?

A. I have a large number of cases that I have kept statistics on showing dementia. I have found out that at least 40 per cent. of the masturbators, or 40 per cent. of these cases that have been persistent masturbators, have become insane. Afterward in the institution we used to use methods to stop the masturbation and the patient would clear up and could be sent home; therefore we came to the conclusion that masturbation was the cause of this condition in the cases that cleared up. Then we would try, if we had a history of the other cases, to obviate the underlying causes if we could.

Q. Suppose that a good, healthy, young, vigorous boy, strong physically, 16 or 17 years of age, who was not concerned about his private organs at all, who had no sexual excitement at all, who lived in the open, out of door life, good wholesome thoughts, would it be normal for him to have night emissions?

A. It would not be abnormal if he had night emissions if he did not masturbate. If the ducts become filled they are liable to open up at any time.

Q. Is it your opinion that in a strong, healthy young man, from 16 to 22, unmarried, night emissions once a week, or once in ten days, is normal?

A. That question is put to me right along, and I will answer once in four weeks.

Q. Then you will not say, as I take it, that once in two weeks was pathologic?

A. No, sir.

Q. Suppose a young man had those night emissions and had not talked with his parents about it or had not talked with any doctor about it, if he should be made to believe that it was an alarming state of affairs, wouldn't that be injurious to him?

A. It might or might not.

Q. Well, you have made a specialty of nervous troubles, have you not?

A. Yes, sir.

Q. And isn't it a fact that one of the worst things that you can do for a person is to make them believe that they are very sick?

A. No, sir, it is a good thing in neurasthenia.

Q. Is that one of your treatments, to make your patients believe they are very sick?

A. In neurasthenia it is the ideal treatment.

Q. Is that the way you treat neurasthenia?

A. Yes, sir, and I am very successful.

Q. You think you have treated as many nerve patients as any nerve specialist in Chicago, do you?

A. I think my record will show it.

Q. Are there physicians who treat nervous diseases in Chicago here who have been practicing for twenty-five or thirty years?

A. Yes, sir, but it is like a building association, they mature in about ten years.

Q. You think that those old, experienced doctors, who are making a specialty of neurasthenia and nervous diseases, are too mature, too, do you?

A. I said that they get beyond usefulness in regard to nervous conditions and do general work.

Q. Do you think that an old, experienced specialist in Chicago here who has been practicing for twenty-five or thirty years, along that line, has become too old, has had too much experience to be real good along that line?

A. Well, if you know them you know they are, because most of them are nervous wrecks, insane now.

Q. Name some of them who are nervous wrecks and insane now.

A. Dr. Lyman.[1]

Q. Who else?

A. Dr. Clevinger.

Q. Any more?

A. Dr. Brower.

Q. Dr. Brower?

A. He has had nervous shock.

Q. Do you think he is insane?

A. I do not say they are all insane, I say they are nervous cases.

Q. How do you expect to be yourself, after you have practiced, after you have made a specialty and practiced it for ten years?

A. Probably I will be in the same shape. I hope not to, but that is usually the way they finish up.

Q. Do you know Dr. Church, who has made a specialty of nervous diseases here in Chicago?

A. Yes, sir, he is a good man.

Q. Do you know Dr. Harold N. Moyer?

A. He does not do any general practice. He just testifies in court.

Q. Don't you think he is an able specialist along the lines of nervous diseases?

A. I don't think so. He was.

Q. You don't think that Dr. Moyer is losing his mind at all, do you?

A. I am in no position to state, I have not given him an examination lately.

Q. Now I will ask you about Dr. King. Do you know him?

A. Yes, sir.

Q. Who is he? Has he lost his mind at all from the effects of treating neurasthenia?

A. I will not make a statement on the witness stand. I have my opinion, though.

Q. What is that opinion, doctor?

A. I refuse to answer for fear that I will incriminate myself. I have done some work with him.

Q. What percentage of young men between 16 and 23 practice masturbation more or less, in your opinion?

A. About 99.9 per cent.

Q. Do you consider that it would be injurious for a young man to masturbate once in two weeks?

A. If he was a strong man I would not think so, if he did it two or three times.

Q. Do you think that the placing of this book, "Perfect Manhood," in the hands of the laity would be a good thing or a bad thing?

A. If it was to be delivered to men, I think it would be harmless. I think it would enlighten a good many of them.

Q. Wouldn't you say this, as an expert along the lines of nervous diseases, that in many instances, to put it into the hands of an ignorant boy, a boy that was not informed on this subject, that it might do injury in the way of making him worry and become nervous and injure his nervous system?

A. It might have some effect on his nervous system, but I think it would be a good thing from his standpoint—that it would bring him to a physician, if he saw that he had those things, and if he practiced any of those things, it would be a benefit to him.

At the end of the trial it was found that the business conducted under the names Boston Medical Institute, F. L. Hibbard, E. R. Hibbard, Bellevue Medical Institute, B. Norton and B. Newton, was a scheme for obtaining money through the mails by means of false and fraudulent pretenses; and a verdict against Edward R. Hibbard was given as cited in the beginning of this article.

Therapeutics

HYPNOTICS. II.

CHLORAL.

The action desired and expected from chloral is to produce sleep and to quiet excitability and irritability of the nervous system.

Chloral hydrate is more or less irritant to the skin and mucous membranes, depending on its concentration. If it is diluted or in syrupy solutions, which it forms when rubbed up with camphor in equal parts, while the first sensation may be that of burning, especially when the skin is irritable, the secondary action is a sedative, the peripheral nerves being slightly dulled, and the part becomes mildly anesthetized. Chloral solutions or

1. In connection with Dr. Lowenthal's evidence, it is interesting to note that Dr. Lyman died in November, 1904.

chloral combinations are therefore sometimes used locally with good effect when there is burning or itching of different parts of the body, such as in pruritus ani or pruritus vulvæ. The same burning action occurs when it is applied to mucous membranes, and is followed by a dulling of sensation. If the solution is too concentrated it may cause ulceration; therefore chloral should never be administered in powder or capsule, but should always be given in solution, well diluted.

Its primary systemic action is as a sedative to the brain and spinal cord. It seems to act specifically as a sedative to the brain cells and produces normal sleep. Whether this sleep occurs by actually stupefying the brain cells or by diminishing the circulation in the brain has not been determined. It is the nearest to a perfect hypnotic that we have, and may be used whenever a soporific drug is needed, provided there is no serious cardiac or circulatory debility. After an ordinary sized dose the patient awakens in normal condition, and without depression, unless the hypnotic has been frequently repeated. Larger doses will quiet the delirium of meningitis and will stop cerebral and spinal convulsions. When the convulsions are due to a spinal poison, as strychnin, or tetanus or hydrophobia, the dose of chloral must be very large, almost poisonous. Consequently, when such an action of chloral is desired, it should be conjointly given with large doses of bromid, and if the convulsions are frequent and severe chloroform must be resorted to rather than the administration of dangerous doses of chloral.

Chloral is a circulatory sedative, causing some vasodilatation, slowing, and in large doses weakening the heart. In diseased conditions of the heart it has been thought to have hastened death by causing cardiac failure. Except in small doses, it should not be given when the pulse tension is low and the heart action very weak. However, its quieting effect on the circulation and its causing, perhaps, much needed sleep has done a great deal more good than it has ever done harm. Small doses, as 0.20 gram (3 grains) three times a day, have been given to reduce high tension in arteriosclerosis. It will sometimes do this effectually in this small dose, but perhaps generally the nitrites or iodids act better.

It circulates in the blood as chloral, and is excreted largely by the kidneys, ordinarily without causing irritation. It acts rapidly as a hypnotic, and should cause sleep in less than an hour. In concentrated solutions or when it finds the stomach in such a condition that it may be rapidly absorbed, or in poisonous dose ("knockout drops"), it can produce sleep very rapidly.

In view of the fact that a few individuals show a peculiar idiosyncrasy for chloral—delirium, etc.—it is advisable to be cautious in giving it to a patient for the first time.

The symptoms of its profound action are more or less profound stupor, dilated pupils, cold, clammy perspiration, weak heart action, feeble pulse, and gradually failing respiration.

The treatment of chloral poisoning or poisoning by "knockout drops" is to wash out the stomach with warm water or to remove its contents by emetics. The body temperature should be kept up with dry heat applications, and strychnin should be given hypodermatically. If a full dose of strychnin, as 1/20 of a grain, does not improve the circulation, atropin in a dose of 1/100 of a grain should be given hypodermatically. If the circulation still fails, resort should be had to intramuscular injections of a saturated solution of camphor in olive oil, 1 c.c. (15 minims), which may be repeated every fifteen minutes for several times, if needed, or an adrenalin or suprarenalin solution (1 to 1,000) given once, in a dose of 1 c.c. (15 minims). If the respiration fails, artificial respiration should be resorted to.

If at any time after the administration of a therapeutic dose of chloral cardiac depression occurs, strychnin and digitalis should be given.

Chloral is a very disagreeable drug to take. It can not be given hypodermatically on account of the size of the dose and the irritation that it causes. It is rarely advisable to give it by the rectum unless convulsions prevent its administration by the mouth. It has a nauseating, acrid, burning taste which is not readily disguised. It should always be given well diluted.

Chloralum Hydratum, U. S. P., occurs in crystals which are very soluble in water and alcohol. It is incompatible with alkalies. The ordinary dose is 1 gram (15 grains), and when given by the rectum 1.50 grams (22½ grains).

As above stated, it is almost impossible to disguise the taste of chloral, but it is perhaps best administered in sour solutions, or it may be ordered in plain water and given in fresh lemonade.

R.	gm. or c.c.		
Chlorali hydrati	10	or	3iii
Aquæ	50		f℥ii

M. et Sig.: A teaspoonful in half a glass of fresh lemonade, or in carbonated water, one-half hour before bedtime.

Or:

R.	gm. or c.c.		
Chlorali hydrati	10		3iii
Syrupi acidi citrici	25	or	
Aquæ	ad 50		āā. f℥i

M. et Sig.: A teaspoonful, in plenty of water, at bedtime.

Or:

R.	gm. or c.c.		
Chlorali hydrati	20		3ivss
Syrupi aurantii	50	or	
Aquæ	ad 100		āā. f℥iss

M. et Sig.: A teaspoonful, with plenty of water, as directed.

Chloral is often combined with one or more bromids. Generally, however, it is best to have these nerve sedatives in separate solutions so that one may be increased or diminished without variation in the dose of the other, if it is so desired. For instance, in delirium tremens it may be best to continue the bromid and to stop the chloral, or to increase the amount of bromid without increasing the amount of chloral. However, if it is desired to combine them they may be given as follows:

R.	gm. or c.c.		
Chlorali hydrati	5		3iss
Potassii bromidi	10	or	3iii
Syrupi acidi citrici	50		
Aquæ	ad 100		āā. f℥ii

M. et Sig.: Two teaspoonfuls, in water, and repeated in two hours if deemed advisable.

Shoemaker suggests the following combination:

R.	gm. or c.c.		
Chlorali hydrati	10		3iii
Potassii bromidi	15	or	3ivss
Syrupi lactucarii	50		
Syrupi aurantii	ad 100		āā. f℥ii

M. et Sig.: Two teaspoonfuls in plenty of water, at bedtime.

The National Formulary recognizes mistura chlorali et potassii bromidi composita. Four cubic centimeters (1 fluidram) of this preparation contain 0.80 grams (12 grains) each of chloral and potassium bromid, and

0.008 gram (1/8 grain) each of extract of cannabis indica and hyoscyamus. The dose is a teaspoonful.

When there is pain chloral may be combined with morphin to produce sleep, as:

R.	gm. or c.c.		
Morphinæ sulphatis	.08		gr. iss
Chlorali hydrati	5	or	ʒiss
Glycerini	10		ƒʒiii
Aquæ	ad 50		ad ƒʒii

M. et Sig.: A teaspoonful, in water, as directed.

The National Formulary also recognizes Chloral camphoratum, a combination of equal parts of chloral and camphor, which, as above stated, when rubbed together make a liquid. This preparation is for external use as a sedative for painful nerves and for itching when there is not much irritation of the skin.

Cocain may be added to this combination, as:

R.	gm. or c.c.		
Cocainæ hydrochloridi	.60		gr. x
Camphoræ	15	or	
Chlorali hydrati	15		ää. ʒss

M. et Sig.: Use externally as directed.

The combination of chloral and camphor may also be used on flea and mosquito bites.

Chloral hydrate applications are sometimes used in urticaria, as:

R.	gm. or c.c.		
Chlorali hydrati	5		
Acidi borici	5	or	ää. 5i
Aquæ camphoræ	200		ƒʒvi

M. et Sig.: Use externally.

Chloral hydrate may be incorporated into an ointment and may be thus used locally in neuralgias and myalgias, as:

R.	gm. or c.c.		
Chlorali hydrati	5		
Camphoræ	5	or	ää. ʒiss
Petrolati albi	25		ʒi

M. et Sig.: Use externally.

If chloral is added to a stimulating liniment it will increase its counterirritant action, as:

R.	gm. or c.c.		
Chlorali hydrati	5	or	ʒiss
Linimenti chloroformi	100		ƒʒiv

M. et Sig.: Use externally.

CHLORALAMID.

Chloralformamidum U. S. P. occurs as crystals which are a compound of chloral and formamid. It is soluble in water in 5 per cent. solution, and is very soluble in alcohol and glycerin. The dose is 1 gram (15 grains).

Chloralamid may be epigrammatically described as acting "just like chloral, only less so." This means that it is less soluble, less irritant, less rapidly absorbed, less powerful as a hypnotic, has less nerve sedative action on the brain and spinal cord, and is less of a circulatory depressant.

On account of its being less irritating in the stomach than chloral it may be administered in capsules, as:

R.	gm.		
Chloralformamidi	10	or	ʒiiss

Fac capsulas siccas 20.

Sig.: Two capsules, with a glass of water, two hours before bedtime.

Chloralamid is better, however, administered in solution, as:

R.	gm. or c.c.		
Chloralformamidi	10		ʒiii
Glycerini	25	or	ƒʒi
Spiritus frumenti	ad 100		ad ƒʒiv

M. et Sig.: Two teaspoonfuls, in a half glass of water, one hour before bedtime.

New and Nonofficial Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL "NEW AND NONOFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on an advertising page of THE JOURNAL *in the first issue of each month.)*

(Continued from Vol. LI, page 1255.)

BETA-EUCAINE LACTATE—Eucaini Lactas.—Beta-eucaine lactate is the lactate of benzoyl-vinyl-diacetonalkamine, $C_{21}H_{23}NO_2CH_3CH(OH)COOH$.

It is prepared in a manner similar to the method for beta-eucaine hydrochloride, lactic acid being substituted for hydrochloric.

Beta-eucaine lactate forms a white crystalline powder soluble in water at the ordinary temperature to about 22 per cent., in alcohol to about 11 per cent., in chloroform about 20 per cent., in fatty oils with the aid of chloroform. It melts at about 152° C. (305.6° F.). The aqueous solution is feebly alkaline to litmus. In aqueous solutions the base can be thrown down by solutions of sodium or potassium hydroxide as an oily deposit which solidifies after a time. Ammonia produces a precipitate which redissolves, but is reprecipitated on the addition of more ammonia.

Tests. The precipitate caused by 4 drops of ammonia water (10 per cent.) in a solution of 0.1 Gm. of beta-eucaine lactate in 20 Cc. of water is redissolved on the addition of 20 Cc. of water.

If a few drops of diluted sulphuric acid and 1 Cc. of potassium bichromate solution (1:10) are added to 0.1 Gm. of eucaine lactate, heating develops an odor of acetaldehyde.

0.1 Gm. of eucaine lactate should dissolve without coloration in 1 Cc. of cold sulphuric acid (sp. gr. 1.84). 0.2 Gm. of eucaine lactate, on combustion, should leave no weighable residue.

Quantitative Determination: 0.5 Gm. eucaine lactate is dissolved in 100 Cc. of alcohol. This solution is titrated with N 1/10 NaOH V.S. using phenolphthalein as indicator. 1 Cc. N 1/10 NaOH V.S. = 0.0237 Gm. of eucaine lactate. Instead the alkaloid may be extracted with chloroform from the aqueous solution made alkaline with ammonia water, the chloroform allowed to evaporate spontaneously, the residue dried in a desiccator, and weighed. The alkaloid should weigh 73.31 per cent. of the weight of the salt.

Actions and Uses.—The same as those of beta-eucaine-hydrochloride, over which it possesses the advantage of greater solubility.

Dosage.—For hypodermic injections, 2 to 4 per cent. solutions (preferably in 0.6 to 1.0 per cent. sodium chloride solution with or without suprarenal alkaloid); in the eye, 1 to 2 per cent. solutions; for penciling or tamponading mucous membranes, 10 to 15 per cent. solutions; for infiltration, 1 to 500 solutions with sodium chloride 0.6 to 1 per cent. and suprarenal alkloid; for painful wounds, 5 to 10 per cent. ointments with wool fat (adeps lanæ).

Manufactured by Chemisch Fabrik auf Actien, vorm. E. Scheing, Berlin; (Schering & Glatz, New York). U. S. patent 657,880.

GLYCEROLE OF LECITHIN—Glyceritum Lecithini.—Glycerole of lecithin is a solution of lecithin in pure glycerin, containing in each 100 Cc., 1.6 Gm., of pure lecithin.

Actions and Uses.—See Lecithin.

Dosage.—4 Cc. (1 fluidram) containing 0.06 Gm. (1 grain) of lecithin.

Manufactured by Fairchild Bros. & Foster, New York. Not patented or trademarked.

LECITHIN SOLUTION.—A solution of lecithin containing 1.6 Gm. of lecithin in 100 Cc. of a glycerin-alcoholic menstruum containing 18.5 per cent. of alcohol by volume.

Actions and Uses.—See Lecithin.

Dosage.—4 Cc. (1 fluidram), containing 0.06 Gm. (1 grain) of lecithin.

Manufactured by Fairchild Bros. & Foster, New York. Not patented or trademarked.

(To be continued.)

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[For other information see second page following reading matter]

SATURDAY, OCTOBER 17, 1908.

BARIUM, A CAUSE OF THE LOCO-WEED DISEASE.

Some time ago we called attention to a preliminary paper by Crawford[1] on barium as a cause of "loco" in animals. Crawford's complete work has recently appeared as a bulletin of the Bureau of Plant Industry, United States Department of Agriculture.[2] Although the subject of "loco" is largely of economic interest, since it causes very extensive losses of live stock in the entire western half of the United States, there is in this work much of interest to physicians.

Briefly stated, Crawford finds that certain plants, of themselves harmless, or even available as forage, frequently, when growing on certain soils, take up barium in quantities sufficient to cause poisoning, either acute or chronic, in live stock. All previous efforts to discover a poisonous principle in the so-called loco plants had failed; some believed that the condition known as "loco" was due to malnutrition or helminthiasis, while the few who had observed toxic effects from the administration of extracts of the plants believed the toxic agent to be some unstable body such, for example, as occurs in cannabis indica. Hence, the discovery that barium is the poisonous element is most surprising.

This work is unusually suggestive aside from being such a valuable contribution to a subject of great economic importance. It raises the question whether certain vegetables, etc., used as food by man may not become injurious in a similar way; also whether certain properties in virtue of which certain plants are recommended for therapeutic purposes are not more or less accidental. Thus Bunge found much iron in spinach, and this plant is often recommended as a "natural" source of iron in anemia; does spinach invariably contain iron, or is it a more or less accidental constituent dependent on the nature of the soil on which the plant is grown?

Barium is known to be decidedly poisonous to man (Crawford gives an excellent survey of the literature on this subject), and these experiments show that great care should be exercised in its medicinal use. It has also been shown that barium may be taken up at times by many plants; whether this is the case with plants used as food by man is not known, but it is evident that such possibilities must be kept in mind.

Perhaps the most suggestive feature of Crawford's work is that it affords another illustration of how injuriously small amounts of a substance may act when its use is long continued. Such subtle poisons are of the greatest interest to physicians; our knowledge of the number and the ways in which they may produce harm is increasing rapidly.

It will be interesting to see to what extent some of the arterial and renal diseases, the etiology of which is at present so obscure, will in the future be traced to the slow action of minute amounts of poisons contained in our food, just as some forms of gout are now attributed to chronic lead poisoning. Of interest in this connection are two recent papers on "Spontaneous Arterial Degeneration." Miles,[3] writing from Colorado, reported finding such degeneration in nearly 35 per cent. of the rabbits examined; Pearce,[4] writing from Albany, found it in but 6 per cent. May not the greater frequency of this "spontaneous" degeneration in Colorado be due to the forage plants of the former region containing minute amounts of some mineral poisons (possibly barium among them) taken up from the soil? It is known that barium contracts the arterioles and raises the blood pressure.

The fact that barium may occur in plants in sufficient amount to cause poisoning is of interest in connection with an argument frequently advanced in justification of the use of chemical preservatives in food, viz., that because small amounts of benzoic acid occur in cranberries, saltpeter in cabbage, etc., that this is sufficient to prove their harmlessness when added to food products. There may be no immediate evidence of harm—just as there is no evidence of harm when animals eat but little of the loco-weed—but it is not the immediate, obvious harm which is most important; it is the subtle changes caused by amounts too small to produce obvious effects which are of most importance.

Crawford's experiments, which go far toward clearing up a great economic problem, are thus of much interest from several other standpoints; they are, moreover, models of exact scientific work and will doubtlessly long remain as one of the most notable contributions to pharmacology made in America.

PRESIDENT ROOSEVELT AND A DEPARTMENT OF PUBLIC HEALTH.

During the International Congress on Tuberculosis a conference was held in Washington of those especially interested in the question of a national department of health. Among the organizations represented at this conference were the American Medical Association, the American Public Health Association, the Conference of

1. THE JOURNAL, Feb. 8, 1908, p. 458.
2. Barium, A Cause of the Loco-Weed Disease, Bull. 129, Bureau of Plant Industry, Washington, D. C., 1908.
3. THE JOURNAL, Oct. 5, 1907, p. 1173.
4. THE JOURNAL, Sept. 26, 1908, p. 1056.

State and Provincial Boards of Health, the Medical Department of the Army, the United States Public Health and Marine-Hospital Service, the Committee of One Hundred, the American Association for the Advancement of Science, the National Child-Labor Committee, and the Organized Charities Association of New York.

The announcement was made at this meeting that President Roosevelt proposed, as one of his administration policies, the concentration into one department of the principal bureaus relating to public health, now scattered in different departments. A resolution was adopted heartily endorsing the President's plan. This decision of the President is both promising and encouraging, as the necessity of remedying present conditions has long been apparent to all who have given the question a moment's thought.

It is not known yet what department will be selected by the President for conversion into a department of health and allied subjects, though the Department of the Interior has been suggested. If this plan were adopted, some of the bureaus now in the Department of the Interior would be transferred to other departments, while such bureaus as Dr. Wyman's—the United States Public Health and Marine-Hospital Service—and Dr. Wiley's—the Bureau of Chemistry—both of which are doing such magnificent work for public health at the present time, would be transferred to the Department of the Interior. It has also been suggested that the health office of the City of Washington should be put under the same department, to the end that our national capital might be made a model of sanitation for the country and for the world. Where transfers are impracticable, a closer cooperation might be secured with such bureaus as that of the census, which collects vital statistics; the Bureau of Labor, which is interested in the medico-economic aspect of dangerous trades, such as accidents from machinery, child labor, etc.; the Bureau of Immigration and the Bureaus of Animal and Plant Industries, which are engaged in meat inspection, investigation of milk, water pollution, etc. The problem is not an easy one to solve, and undoubtedly the initial movement will be simply the transference of a few of the bureaus; a gradual rearrangement ought then to continue after the start has once been made.

The principal officials concerned in the proposed transfers, including Dr. Wyman, have publicly expressed their support of the President's policy, which has also the endorsement of most, if not all, of the important health, medical and labor organizations of the country. The two leading political parties in their platforms and the two leading candidates for the presidency have also declared in favor of substantially the same plan. This is the first presidential campaign in which public health has been thus recognized. It is most gratifying that this propaganda for a department of health is being taken up by organizations other than medical. This shows that the public realizes the desirability of more systematic and co-ordinate work on the part of the Government in matters that relate to public health. The work of the Committee of One Hundred, in interesting the public, members of Congress and others, has been a large factor during the last year and a half in producing the present satisfactory situation.

While this movement does not mean an independent department of health, with a physician at the head, and in the cabinet—something which seems to be out of the question for a time at least—it does mean a department whose chief function will be to guard the health of the people, including all that this involves. Hence, though it will not be all that we might desire, it will be a decided advance and a step in the right direction, and the President's plan should receive the hearty endorsement of the medical profession.

THE DENSLOW CURE (?) FOR TABES.

Grossly sensational reports have appeared in the daily press recently regarding a paper, read before the New York Academy of Medicine, describing an alleged cure for locomotor ataxia, the writer of the paper being a Dr. LeGrand N. Denslow. We have not been able to learn in what the "cure" consists, as our only information thus far is that which has appeared in the newspapers. Our New York correspondent, whom we asked to call on Dr. Denslow and get the facts regarding the matter, reports that the facts were refused him, but that he was told that they could be obtained from a letter which Dr. Denslow had sent to the *New York Times* for publication. This particular course of action, of itself, would be rather peculiar on the part of an honorable physician. Usually when a physician has important medical knowledge to impart he publishes it in medical journals—not in the newspapers.

The methods of this gentleman prompt us to ask whether or not he is the one we referred[1] to about a year and a half ago in connection with a similar "cure" exploited in London. As stated at that time, an American giving the name of LeGrand N. Denslow was summoned before the police magistrate of Marylebone and fined $150 and costs for using the title of doctor and physician, thereby implying that he was registered under the medical act. The evidence showed that the defendant had advertised that he was able to cure locomotor ataxia. According to the *British Medical Journal*, an advertisement appeared in the London daily papers, apparently from a person who had been cured of locomotor ataxia, offering to inform sufferers from the disease where they could get relief—the old, old scheme. Those answering the advertisement were referred to Denslow. When a representative of the Medical Defense Union—which was investigating the matter—called on Denslow the latter, it is alleged, stated that he could

1. THE JOURNAL, Feb. 23, 1907, p. 715

cure locomotor ataxia. His fee, he added, was 500 guineas for those who could afford it, but that he would soon be charging 1,000 guineas, as the cure cost him 150 guineas. In defence it was stated that LeGrand N. Denslow had numerous qualifications, including M.D. of New York, and that he had been practicing in America since 1876.

Whether or not this LeGrand N. Denslow of locomotor ataxia notoriety in London is the same as the LeGrand N. Denslow who presented the paper before the New York Academy of Medicine, we have no means of knowing. Their methods seem to be very similar. According to the directories, one LeGrand N. Denslow, who was graduated by the College of Physicians and Surgeons in the city of New York in 1876, seems to have led a somewhat peripatetic existence. In 1886 he is recorded as practicing in St. Paul, Minn.; in 1896 he seems to have wandered west to Los Angeles, and by 1901 he had gravitated to New York. In the interim of 1904-1908 we have no record of his location, unless he be the one referred to by the British medical press in 1906.

As stated above, we know nothing about this particular "cure"; this much is sure, the method of exploitation will not commend itself to the medical profession of the United States.

THE SMOKE NUISANCE.

That American cities in general, and Chicago and Pittsburg in particular, suffer enormous losses in health and money from the smoke nuisance, is a fact that has become trite. Our London correspondent in this issue[1] refers to the good work done in that city by the Coal Smoke Abatement Society in attempting to free the city from the smoke nuisance. While in this country it is fondly believed that London is the "horrible example" in smoky cities, the fact is that several cities in the United States are far worse in this regard than is the British metropolis. In London the smoke nuisance arises from the old-fashioned but universal method of heating the dwellings. The modern steam-heated, or even furnace-heated, flat is almost an unknown quantity in London, except for a comparatively few high-priced apartments in the West End. Everywhere is found the open fireplace in each room, with its wasteful method of heating and its poor combustion. Where in New York or Chicago we would find thirty families living in one steam-heated apartment building with its single heating plant and comparatively good combustion and, therefore, little smoke, we would find in London the thirty families living in thirty separate, semidetached villas, each with its three or four fireplaces pouring out their full quota of smoke. On the other hand, the manufacturing plants in London are severely amenable to the law against the smoke nuisance—and, what is of still greater moment, the law is strictly enforced. The steam railways, particularly those in the suburban service in London, are not great offenders in producing smoke. Whether this is due to the construction of such engines, to the care in firing or to the quality of the coal used, or to all three of these factors, we can not say. The fact remains that the wide swath of cinders and soot that borders each side of a suburban steam track through an American city is lacking. Nevertheless, at least one London suburban line—the South London Railway—has nearly completed the electrification of its system. In American cities the smoke nuisance is due almost entirely to the indifference displayed by the manufacturers and the railroads to the law regulating—or supposedly regulating—smoke production. The individual householder is a negligible quantity. In spite of the fact, often demonstrated and reiterated by our correspondent, that "in industrial concerns the abatement of the smoke nuisance by mechanical apparatus is found to be generally attended with economical working," it seems impossible to convince American manufacturers that their own interests lie in that direction. The menace to health and the incalculable damage to property due to the smoke nuisance will continue in American cities so long as the enforcement of law is trifled with.

1. London Letter, p. 1345.

THE EXHIBITS AT THE TUBERCULOSIS CONGRESS.

The exhibits of the International Congress on Tuberculosis probably constituted the greatest antituberculosis exhibition ever assembled. In another column[1] we describe many of its features. It is natural that, because of its nearness, the United States should lead in the size and elaborateness of the exhibits when classified by countries. Of the foreign exhibits, those of Germany, England, and Sweden are the best, with Germany leading. The states making creditable exhibits are New York, Pennsylvania, Massachusetts, Connecticut, Colorado, Minnesota, Maine, Michigan, Maryland and Wisconsin. The Army and Navy exhibit is very meritorious. Of the educational exhibits given by states, that of New York, particularly including the New York City exhibit, is by far the best. From a scientific standpoint, Pennsylvania, and particularly the Phipps Institute, leads. Some of the states had no exhibit. Practically every sanatorium in the country, outside of a few states, had an exhibit. The work reflects great credit on all concerned.

1. See page 1369 of this issue.

Medical News

GEORGIA.

Sanitarium Sold.—The Piedmont Sanitarium, Atlanta, established by Drs. Floyd W. McRae and Ludwig Amster, has been purchased by Drs. Amster, E. Bates Block and Michael Hoke for $24,000. Plans are being made for extensive improvements and the erection of new buildings. Dr. McRae will continue his connection with the sanitarium.

Medical Schools Open.—The Atlanta School of Medicine opened its annual session September 22, at which addresses were given by the governor and by Rev. C. R. Wilmer, D.D. ——The Medical College of Georgia, Augusta, opened for its annual session October 1.——The fifty-fourth session of Atlanta College of Physicians and Surgeons commenced September 23.

Personal.—Dr. Willis B. Jones has succeeded Dr. William P. Nicholson as attending physician on the staff of the Grady Hospital, Atlanta.——Dr. Maury M. Stapler, Macon, has been appointed surgeon for the Georgia Southern & Florida Railway.——Dr. Thomas H. Hall, Macon, has been elected optician for the Academy for the Blind.——Dr. W. Whatley Battey, Jr., Augusta, has been elected secretary of the Surgeons' Club, Rochester, Minn.

ILLINOIS.

Diphtheria.—Kankakee reports six cases of diphtheria.——An epidemic of diphtheria is feared at Waukegan, where several cases have been reported.

Personal.—Dr. George Stacy has been appointed pathologist to the Illinois Central Hospital for the Insane, Jacksonville.——Dr. Robert F. Hayes, Freeport, who has practiced medicine for more than fifty years in Stephenson County, has decided to retire from practice.

Branch Society Meeting.—At the annual meeting of the Evanston Branch of the Chicago Medical Society, the following officers were elected: President, Dr. Stephen V. Balderston; secretary-treasurer, Dr. William C. Danforth; councilor, Dr. Ernest L. McEwen; and alternate, Dr. George W. Boot.

Chicago.

Fined.—Ottolie Blaha and Mary Vollmann, accused with practicing medicine without a license, are each said to have been fined $100 and costs by Municipal Judge Scovel, September 28.

Discourse on Tuberculosis.—Prof. O. Medin of the Karolinska Institute, Stockholm, a delegate from Sweden to the International Congress on Tuberculosis, delivered a lecture October 6, at the Young Men's Christian Association auditorium, on "Method and Prevention of Tuberculosis in Children."

Adams Succeeds Senn.—Dr. Charles Adams, for more than twenty years a medical officer of the Illinois National Guard, and one of the pioneers in reorganizing the medical department that it might approximate as nearly as possible to the medical corps of the Army, was appointed by the governor surgeon general of the state October 9.

September Mortality.—The total deaths during September were 2,818, equivalent to an annual death rate of 13 per 1,000. Acute intestinal diseases caused 544 deaths; consumption, 252; violence (including suicide), 171; heart diseases, 161; nephritis, 150; pneumonia, 136; cancer, 101; typhoid fever, 42; diphtheria, 41; scarlet fever, 29; whooping cough, 7, and measles, 5.

New Head for Tuberculosis Institute.—Frank E. Wing, who is at present engaged in investigating health conditions in Pittsburg, was elected superintendent of the Chicago Tuberculosis Institute, October 9, to succeed Alexander Wilson. S. C. Kingsley, superintendent of the Chicago Relief and Aid Society, was elected secretary, vice Ernest P. Bicknell, who has gone to New York to take charge of the American National Red Cross work.

To Guard Against Contagion.—On account of complaints made to inspectors of the health department that the police were not giving sufficient support to the employés of the Health Department in enforcing quarantine in contagious diseases, a general order was issued October 9, by the chief of police, directing the commanding officers to instruct their men that the warning cards of the health department were not to be torn down, and also that infected children were to be kept off the street.

INDIANA.

Epidemic Diseases.—Bedford reports an epidemic of scarlet fever.——Several cases of scarlet fever are reported from Warsaw.——Diphtheria is said to be epidemic in Columbus.

Personal.—Dr. David C. Peyton, Jeffersonville, has been appointed secretary of the Clark County Board of Health, vice Dr. W. Marshall Varble, resigned.——Dr. John F. Glover, chief of the medical staff of the Southern Hospital for the Insane, Evansville, has returned after three months' absence on account of nervous exhaustion.——Dr. James Y. Welborn has been elected president; Dr. E. C. Taylor, secretary; and Drs. Charles P. Bacon and E. P. Busse have been elected directors of the Evansville Anti-Tuberculosis Society.——Dr. Harry B. Smith, Kokomo, has been appointed to succeed Dr. Harry C. Sharp, resigned, as physician at the Indiana Reformatory, Jeffersonville.——Dr. Charles E. Barnett, Fort Wayne, sailed for Europe September 28.——Dr. James E. King, Richmond, has been named health officer of Wayne County, vice Dr. George H. Grant, deceased.

IOWA.

Personal.—On account of a question of ethics, Drs. Addison C. Page, Oliver J. Fay, L. D. Piper, R. J. Lynch, Mathew L. Turner, Charles M. Werts, J. F. McKitrick, David W. Smouse, Charles F. Smith, Lewis Schooler, Granville N. Ryan and W. O. Smouse have resigned from the Grant Club, Des Moines.——Dr. Thomas A. Burcham, Des Moines, has been appointed physician of Polk County, vice Dr. Corvus C. Lang, Altoona, resigned.

Communicable Diseases.—The Campbell school in Fremont township has been closed for a week on account of the presence of several cases of spinal meningitis among the pupils.——Several cases of diphtheria are noted in South Muscatine.——Typhoid fever is reported to be epidemic in Fairfield, where 47 cases were reported during September.——Ottumwa reports 17 cases of typhoid fever.——Twenty-two cases of typhoid fever are reported in Brighton.

KENTUCKY.

Appropriation for Medical College.—The general council of Louisville has passed an ordinance which has been signed by the mayor, appropriating $25,000 from the general purpose fund for 1908, for the use of the Medical Department of the University of Louisville. The money is to be expended entirely for laboratory equipment for the consolidated medical schools. A preliminary course will begin October 15, and will continue until the opening of the regular session, November 18.

Communicable Diseases.—On account of the prevalence of scarlet fever in Springfield, the schools have been closed for one week.——Typhoid fever is reported to be epidemic in several parts of Nicholas County.——Diphtheria and scarlet fever are reported to be prevalent at Buchanan, and the public school has been closed.——The public school of Glasgow has been ordered closed on account of diphtheria.——Typhoid fever is said to be prevalent at Merry Oaks, Railton and Hink.——The school at Prestonia has been closed on account of diphtheria.

Personal.—W. E. Bender, formerly second assistant physician at the Eastern Kentucky Asylum for the Insane, Lexington, has been appointed to a similar position in the Western Kentucky Asylum, Hopkinsville.——Dr. Frederick A. Stine, Jr., has been elected president and Dr. Fred C. Weber, secretary of the board of health of Newport, and Dr. Charles J. Kehm, health officer.——Dr. Roy Robinson, Morton's Gap, has been appointed third assistant physician at the Western Asylum for the Insane, Hopkinsville.——Dr. Alexander A. Hendrix, an aged practitioner of Crofton, has been adjudged of unsound mind.——Dr. James A. Averdick, Covington, is reported to be seriously ill with septicemia, following an operation wound.

MARYLAND.

Faculty Borrows.—The building committee of the Medical and Chirurgical Faculty of Maryland has been authorized by that body to borrow a sum not exceeding $15,000, in addition to the $25,000 previously obtained on mortgage, required to complete the building.

Baltimore.

College Opens.—The College of Physicians and Surgeons of Baltimore opened for its annual session October 5.

Lecture on Bronchoscopy.—Dr. Herman von Schrötter, Vienna, delegate from Austria to the International Congress on Tuberculosis, delivered an illustrated lecture on "Bronchoscopy" in the Medical amphitheater of Johns Hopkins Hospital, October 7.

Gibson in Baltimore.—Dr. George A. Gibson of Edinburgh, Scotland, lectured before the Johns Hopkins Hospital Medical Society October 1 on "Certain Clinical Features of Cardiac Disease." Dr. Gibson was entertained at dinner at the Maryland Club by Dr. Lewellys F. Barker.

Entertains Guests From Abroad.—The Health Commissioner, Dr. James Bosley, entertained Drs. John C. Thresh of the London Hospital Medical College; Robert B. Harkness, Commissioner of Health, of Birmingham, Ala., and other delegates to the International Congress on Tuberculosis, at the health office, October 6.

Hospital Dedicated.—The new Samuel Leon Frank Hospital, a part of the Hebrew Hospital and Asylum, was dedicated October 8. The building was erected by Mrs. Frank at a cost of $100,000. Addresses were delivered by Dr. Harry Adler, president; Dr. Lewellys F. Barker, the governor of the state, the mayor of Baltimore, and Mr. Israel Zangwill. The hospital will have accommodation for about 80 patients.

MASSACHUSETTS.

Consumptive Camps Ready.—The Cambridge board of health on September 17 opened the new camps on Concord Avenue for the reception of consumptive patients. The camps have a capacity of 50.

Hospital Dedicated.—The new Beverly Hospital, erected at a cost of about $100,000, was recently dedicated. The institution consists of an administration building, a pavilion two stories in height, and an operating building. The second pavilion and nurses' home are yet to be built.

Work of Floating Hospital.—The Boston Floating Hospital made its farewell cruise on her fifteenth season, September 15. During the season which began July 1 more than 18,000 babies and mothers have been cared for by this beneficent institution. Dr. John Paul was resident physician for the season.

Swindler Pleaded Guilty. Oliver G. Beauvais, regarding whom warning was published in THE JOURNAL of September 26, was arraigned in the municipal court, Boston, charged with swindling Backbay physicians on orders for medical books, and is said to have pleaded guilty and to have been sentenced to imprisonment for three months in the House of Correction.

Tag Day at South Framingham. On October 3 the benefit day for the Framingham Hospital was held, the object being to make up a deficit of $3,000 in the running expenses of the hospital for the fiscal year about to end. One individual offered to contribute $1,000 provided the other $2,000 was raised. The young women of the town, armed with thousands of red cross tags, picketed the town, exchanging tags for contributions to the fund.

Contagious Diseases. On account of two cases of diphtheria in the Hunnewell grammar school, Wellesley, the school was closed September 25 by the board of health.——Four cases of diphtheria have occurred in one boarding house in Worcester, among Clark College students.——Newburyport announces that there were 26 cases of typhoid fever reported in the city in the six weeks ended September 6.——The epidemic of typhoid fever in Westfield is now believed to be checked.

NEW YORK.

New York City.

Personal.—Dr. W. T. Bull is reported seriously sick.

Entertain Delegates. The foreign delegates to the International Tuberculosis were taken to the Sea Breeze Hospital for Tuberculous Diseases of the Bones, Joints and Glands in Children, October 8, and were dined and entertained at the Academy of Medicine the same evening.

To Promote Fraternal Relations. The Eastern Medical Society of the City of New York has completed arrangements for a dinner and reception to be given on Thanksgiving night, November 26, at the Hotel Astor. By this social gathering the society hopes to promote better fraternal relationship.

Contagious Diseases. There were reported to the sanitary bureau for the week ended October 3, 481 cases of tuberculosis, with 153 deaths; 266 cases of diphtheria, with 21 deaths; 102 cases of scarlet fever, with 4 deaths; 100 cases of typhoid fever, with 19 deaths; 21 cases of whooping cough, with 2 deaths; 7 cases of cerebrospinal meningitis, with 5 deaths; 96 cases of measles, with 2 deaths; a total of 1,073 cases and 206 deaths.

Insanitary Condition of Tenements. The prevalence of cholera in Europe makes it especially important that insanitary conditions be not permitted in New York's crowded tenements. Unless the tenement houses are kept in a sanitary condition, cholera, if it reached this country, would find a ready field for its spread. An increased appropriation is needed by the Tenement House Department, and unless public sentiment is indicated effectively to the members of the Board of Estimate and Apportionment, there is little likelihood that this increase in the appropriation will be granted.

The Denslow Case. The committee appointed by the president of the New York Neurological Society to report on the circumstances attending the reading of a recent paper on locomotor ataxia before the New York Academy of Medicine, reported: "Your committee expresses disapproval of the occurrences following the reading of Dr. Denslow's paper. It is the belief of your committee that papers which express radical views should be freely discussed at the time of their presentation and that every effort should be made to prevent the publication in the newspapers of communications which set forth promise of cure of diseases which are generally held to be incurable. Your committee further believes that, before such "cures" are exploited, they should be submitted to the most rigid investigation."

OHIO.

Medical College Opens. The Cleveland College of Physicians and Surgeons opened for its fall term October 1, Rev. Charles Bayard Mitchell delivering the address on "The Making of a Doctor."

Personal.—Dr. George N. Stewart, professor of experimental medicine in Western Reserve University, has returned from abroad.——Dr. Maulsby W. Blackman has been made lecturer in histology and Dr. Roger G. Perkins associate professor of pathology and hygiene in Western Reserve University Medical School.——Dr. Paul W. Tappan, Dayton, has been appointed physician at the Montgomery County Infirmary.——Dr. and Mrs. E. H. Rorick, Fayette, assumed charge, October 2, as superintendent and matron of the Athens State Hospital for the Insane, respectively, vice Dr. and Mrs. J. T. Hanson, resigned.——Dr. Lark Moon, Columbus, is reported to be critically ill at his home.

Cincinnati.

Medical College Opens. Miami Medical College opened for its forty-ninth annual session October 1, the address being made by the dean, Dr. John C. Oliver.

Proposed Merger of Medical Colleges.—At the autumn meeting of the Cincinnati University senate, the question of the amalgamation of the Ohio Medical College with the Miami Medical College was discussed, and Dean Forchheimer and Dr. B. Knox Rachford were appointed a committee to draw plans for the merging of the two institutions.

Personal.—Dr. Oliver P. Holt has been elected professor of theory and practice of medicine in Miami College, vice Dr. Joseph Eichberg, deceased; Dr. Walter E. Murphy, assistant professor of otology and laryngology; Dr. Mark A. Brown, professor of clinical medicine; Dr. John H. Landis, professor of hygiene, vice Dr. Samuel E. Allen, and Dr. Archibald S. Carson, professor of pathology, vice Dr. Oliver P. Holt.——Dr. Rolla L. Thomas has been elected pathologist to St. Mary's Hospital.——Dr. Edward P. Adams narrowly escaped drowning in the Little Miami river September 27.

PENNSYLVANIA.

Public Schools Closed. Acting under instructions from the State Board of Health, H. C. Kries, health officer of Blythe Township, closed the public and parochial schools of New Philadelphia. This action was taken on account of the presence of diphtheria, from which 5 deaths have been reported.——The Saltsburg schools have been closed on account of the prevalence of diphtheria.

Personal.—Dr. J. D. Bliss, formerly resident physician at Altoona Hospital, has been made *x*-ray surgeon of that institution.——Dr. Benjamin F. Myers, Chambersburg, has been appointed physician to the Franklin County jail, vice Dr. John P. Seibert, deceased.——Dr. David N. Dennis, Erie, sailed for Europe, Oct. 10.——Dr. Geo. W. Schlindwein has been appointed assistant ophthalmologist at St. Francis' Hospital, Erie.——O. D. Blakeley, Franklin, has been appointed by Governor Stuart to the board of trustees of the State Hospital, Polk. The governor also appointed Malcolm McDougal, Morris Run, to the board of trustees of the Cottage Hospital, Bloomsburg.

Communicable Diseases. An epidemic of scarlet fever is reported in Allentown, where 40 cases and 11 deaths have occurred in the last two weeks.——Several cases of diphtheria are reported among pupils of the Jackson school, Williamsport.——Diphtheria is said to be prevalent at Reedsville, where schools have been closed, at Yeagerstown and in Lewistown.——The eighth case of smallpox, resulting from the Cumberland County epidemic, was reported September 24, from Deans Gap.——The fifth case of smallpox in the Enola region was reported September 21.——The state health commissioner has issued an open letter warning the entire state of possible infection from smallpox, and pointing out that immediate vaccination is the only safe course to pursue.——An epidemic of typhoid fever is reported at Mt. Union, where 20 cases are said to exist.——The epidemic of typhoid fever at Rainsburg is said to be on the increase.

Philadelphia.

University Hospital Improvements. In line with improvements and extensions contemplated at the University Hospital, the students' ward has been moved from one of the wings to a new location on the second floor of the main building.

Connected with this ward and separate from the general hospital is a student's special diet kitchen with appliances of the most modern type. The development and perfection of these accommodations for the students is due to the work of the ladies' auxiliary committee.

Personal.—Dr. Howard F. Hansell has returned from Europe. ——Dr. William W. Keen, who recently sustained a dislocation of the right shoulder joint as the result of a fall, is convalescing.——Dr. Anne H. Thomas was recently elected an instructor in physical diagnosis and therapeutics in the Woman's Medical College and appointed assistant physician to the Bryn Mawr Hospital.——Dr. Harry R. Mansfield was thrown from an automobile ambulance October 6 and sustained a severe scalp wound and a dislocation of the right shoulder joint.

Health Report.—The report of the bureau of health for the week ending October 10 reached 402, a decrease of 50 from the previous week and a decrease of 4 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 5; pertussis, 3; diphtheria, 9; consumption, 49; cancer, 15; apoplexy, 10; hepatic cirrhosis, 5; nephritis, 35; heart disease, 29; arteritis, 6; acute respiratory disease, 35; enteritis, 31; premature birth, 10; congenital debility, 16; senility, 4; suicide, 4; accidents, 21; and marasmus, 9. There were 142 cases of contagious disease reported, with 15 deaths, as compared with 204 cases and 20 deaths reported in the preceding 7 days.

Foreign Delegates Entertained.—Delegates to the International Conference on Tuberculosis were entertained September 24, 25 and 26 by physicians and citizens. On the first day they were conducted through the various departments of the University of Pennsylvania, after which luncheon was served in their honor at the Houston Club; and in the evening they were the guests of the Henry Phipps Institute. On the second day, Jefferson Medical College and Hospital was visited, and luncheon was served on the roof garden of the latter. In the evening a banquet was given in their honor, in which Dr. Edgar Smith was toastmaster. On October 26 they visited the Philadelphia General Hospital and the Municipal Hospital, and were entertained at luncheon at the club of the Medico-Chirurgical College; and in the evening were conveyed in special trolley cars to the Josephine Widener Memorial Home for Crippled Children, where after inspection of the building, they were given a lawn supper.

MEDICAL DAY OF FOUNDERS' WEEK.

The physicians of Philadelphia and vicinity celebrated medical day on October 8, in association with the celebration of the two hundred and twenty-fifth anniversary of the founding of the city. The exercises were held in the Walnut Street Theater.

DR. JOHN V. SHOEMAKER, chairman of the committee of arrangements, presided, and in opening the exercises said that $7,500 were given by the city for medical day, of which $6,800 was to be used in publishing the memorial volume, $200 for the medical exhibit in the city hall and $500 for the entertainment of visiting physicians. He spoke of Philadelphia being the medical center of the United States and the first city to establish a hospital and university in this country.

DR. CHARLES K. MILLS, chairman of the committee on publication, said that the memorial volume would contain from 800 to 1,000 pages, and would record the events of founders' week and contain a history of the hospitals, medical schools, prominent physicians and scientific institutions from the time of the city's founding to the present day.

DR. FREDERICK P. HENRY, editor of the volume, said that the work required the labor of sixty collaborators from as many hospitals and medical institutions. The volume will also show how the meuical institutions took care of the poor and sick from 1693 to 1908.

PROF. JOSEPH P. REMINGTON, chairman of the historical exhibit—medical, pharmaceutical, chemical and scientific—said that the exhibit contained about 400 historical objects, among them being the original dispensatory of William Penn, which was brought by him to this country in 1683.

DR. L. WEBSTER FOX, chairman of the committee on Medical Day, reviewed the work of the committee in preparing the exercises for the day.

MEDICAL COLLEGES AND ALLIED INSTITUTIONS OF PHILADELPHIA.

DR. GEORGE A. PIERSOL, University of Pennsylvania: Prior to 1682 medical treatment was carried on along the Delaware by the housewife. Medical camps were established and were conducted by Dr. Griffith Owen, who practiced medicine for thirty-five years, dying in 1717. At this time Dr. John Kerslee came and taught the young Americans the art of medicine. In 1731 the first medical almshouse was founded, and in 1752 the first hospital, the Pennsylvania, was established. Some of Kerslee's pupils were sent abroad to further their studies, and two of them, Dr. John Shippen and Dr. John Morgan, established the first medical school in this country in 1762. Dr. Shippen at this time also started public anatomic lectures in the Pennsylvania Hospital. Dr. John Morgan in 1765 founded the University of Pennsylvania and became its first professor of the theory and practice of medicine. Later he was associated with Dr. Shippen and in the following year with Dr. Thomas Bond in the University of Pennsylvania. In 1768 the first medical degree was given. Before that time, the degree was known as Bachelor of Physic, and S. Benjamin Rush was made a professor in 1769. The first medical graduate was John Archer. In 1791 the University of Pennsylvania and the Philadelphia College amalgamated and 60 years after the establishment of the University Dr. Chapman started extramural teaching and the quiz class. In 1822 Dr. Jasen Lawrence founded the Philadelphia School of Anatomy and two years later Dr. McClellan created a medical school in association with the Jefferson College at Cannonsburg, and in 1825 the first faculty of this institution was organized. In 1838 this became an independent institution, and in 1841 the faculty was reorganized. In 1840 Dr. McClellan organized the Pennsylvania Medical School. Later the Franklin Medical School was established, and following this the Philadelphia Medical College, and in 1859 a fusion of these institutions was made. Hahnemann College, the oldest in this country, was founded in 1848, and in 1849 the first woman graduated in medicine in this country. In 1850 the Woman's Medical College was established and one year later eight women graduated—the first class of women graduated in this country. In 1881 the Medico-Chirurgical College was founded. In 1883 the Polyclinic Hospital and School for Graduates in Medicine was organized, and in 1902 the Medical Department of Temple University was started. Seventy-five years after the founding of the first medical school, dental schools were founded; the first was established in Baltimore in 1840 and in 1852 the Pennsylvania Dental College was started. In 1863 the Philadelphia Dental College began and 1878 the University of Pennsylvania added its Dental Department. In 1897 the Medico-Chirurgical College added a similar department. In 1743 the American Philosophical Society was founded by Benjamin Franklin, and in 1750 the American Society for the Advancement of Science was started; 30 years later these bodies joined forces. The College of Physicians was founded in 1778; the library of this institution was started by eight volumes donated by Dr. John Morgan, and, excepting the medical library in the Surgeon-General's Office, is the largest medical library in the United States. The Academy of Natural Sciences was founded by John Speakman in 1812.

SOME GREAT MEDICAL TEACHERS OF PHILADELPHIA.

DR. S. SOLIS-COHEN: There are more than 52 hospitals and dispensaries in the city, representing an investment of between eight and ten million dollars, and an expenditure of from four to five millions annually. Even this, however, is not enough for the needs of the city, greater facilities being required for the insane and for individuals in the advanced stage of tuberculosis. Whether the Philadelphia General Hospital—Blockley—or the Pennsylvania Hospital has the honor of priority the historians must decide, but in both medical instruction was begun about the middle of the eighteenth century, and the practical lessons in the recognition and treatment of disease given at these institutions have attracted students from all over the civilized world. It was at the Philadelphia General Hospital that Gerhard finally proved the difference between typhoid and typhus. Those who have been taught at these schools have in turn become teachers, and there is in America hardly a teacher of medicine whose knowledge and whose work are not derived directly or indirectly from the great medical teachers of Philadelphia. Benjamin Rush of the University of Pennsylvania represented the best of the eighteenth century, and after Franklin was the foremost citizen of the state; and Jacob Mendes DaCosta represented the best of the seventeenth century. Rush did not confine his activities to medicine, but was also a member of congress and served in the Revolutionary Army at Valley Forge and elsewhere. DaCosta, on the other hand, was essentially a physician and teacher, though he urged on his stu-

dents the cultivation of general science and literature. The teaching of Dr. Isaac Hayes, in the *American Journal of Medical Sciences* and that of other great editors of Philadelphia and the work of the great publishing houses of Philadelphia has never lost prestige, and the city may be considered as the center of medical literature.

HISTORY OF THE DEVELOPMENT OF PRACTICAL MEDICINE IN PHILADELPHIA.

DR. J. M. ANDERS: We of the present day must feel devoutly thankful to the founders of medical science in Philadelphia—to Kearsley, Cadwalader, the Bonds, the elder Shippen, Morgan, Jones, Rush, Gerhard and many others, whose enterprise was not guided and assisted by well-equipped laboratories and overfilled hospital wards. The earliest settlements in Pennsylvania were made by the Swedes and the Dutch, and the first representative of the medical profession, so far as is known, was Jan Petersen, a barber of Alfendolft, who was surgeon to one of the Swedish colonies on the Delaware at a salary of ten guilders a month, beginning July 10, 1638. The first practicing physician was John Goodson of London, who came over as surgeon to the Society of Free Traders shortly before Penn's visit. With the exception of Goodson, Dr. Nicholas Moore, a member of the same body, the barber surgeon prevailed prior to the coming of Penn in 1682. In those days the people were less dependent on physicians in cases of ordinary illness than they are to-day, their chief need being in surgical and difficult obstetrical cases. People were prone to self-medication to a great extent, though not in the modern sense. Even in a greater degree than is true of sparsely settled districts to-day, the people were familiar with common vegetation and its medicinal virtues. Much of this knowledge was acquired from the Indians. In Norris' Garden in Philadelphia many of these plants were grown, and it was an annual custom of the ladies of the family to distribute them among the poor and needy. In 1699 the city suffered an epidemic of yellow fever, and about 220 deaths occurred. In the following year, when Philadelphia had about 700 houses in the neighborhood of the Delaware wharf, the first quarantine law was passed. It was as quarantine physician that Dr. Thomas Graeme served the city more or less constantly during forty years. The first physician of real note in Pennsylvania was Griffith Owen, a Welshman, who, with Dr. Thomas Wynne, came over on the *Welcome*, with Penn. The first amputation performed in Pennsylvania of which any record exists, was done by Griffith Owen (the pioneer). Thomas Wynne never actively followed his profession, but became judge of the principal Supreme Court, and also president of the first assembly held in Philadelphia. During the next decade, a number of men destined to fame in the Annals of Philadelphia Medicine rose slowly above the horizon. Some of these had been apprentices of John Kearsley, others occasionally attendants at his lectures, and several, although later, went abroad to amplify their medical knowledge. Among the latter, much credit should be given to Lloyd Zachary, Phineas Bond, Thos. Bond, Thos. Cadwalader, Wm. Shippen, Jr., and John Morgan for bringing about the more important earlier advances in practical medicine in Philadelphia. Thomas Bond was first to recognize the advantages of the institution method of treating diseases, and the first to found a hospital, namely, the Pennsylvania Hospital, while it was reserved for Morgan to found the first school in America devoted to the teaching of medicine, the Medical Department of the University of Pennsylvania. Cadwalader was the first physician in America to employ electricity in the treatment of disease in a case of paralysis. Prior to 1790, midwifery was almost solely practiced by women, except in difficult cases. The most famous of the Philadelphia midwives was Lydia Darrach, a noted Revolutionary whig, who occupied the celebrated Loxley House. The control of the medical service of the Continental Army was almost solely in the hands of Philadelphia men, hence the history of the Revolutionary period is actually concurrent with that of the history of practical medicine in Philadelphia. This was especially true during the period when sick soldiers were quartered in Philadelphia, e. g., some in the Pennsylvania Hospital and many more in the "Bettering House," and scattered private dwelling houses. The mortality was dreadful and bodies were literally piled into Potter's field, now Washington Square. At an early date the physician was sharply delineated from the surgeon, by Morgan, after which obstetrics became the first specialty. Morgan was the first physician who insisted on sending his patients to an apothecary shop for their medicines. At the suggestion of Dr. Henry Moyer, Samuel Powell Griffith aided in founding the Philadelphia Dispensary, the first of its kind in America. In the epidemic of yellow fever, which occurred in 1793, Rush, in his advocacy of bleeding and purging, divided the profession into two camps. His opinions were widely accepted by the public, but by a minority of his fellow practitioners, and this led to his resignation from the College of Physicians, an institution which he had helped to found in 1786. The College of Physicians had done such splendid work that it was appealed to by the governor in 1794 for suggestions as to the best method of safeguarding the public health. The formation of a body resulted, later known as the "Board of Health." After the demise of Rush, a group of his former pupils came to the front, and as knowledge grew and the tendency toward specialism increased, the supreme dominance of the individual ceased for all time, and collective effort, which had its origin with Morgan and his associates, now became the rule. This explains the multiplication of schools and private institutions for the dissemination of medical knowledge. Then, too, factors prevailed not entirely foreign to our latter-day institutions, although always most regrettable, viz., internal dissensions. In 1820 Dr. Nathaniel Chapman founded the first permanent medical journal in America, *The Philadelphia Journal of the Medical and Physical Sciences*, now known as the *American Journal of the Medical Sciences*. The rapid multiplication of medical schools, the low standard and the short course requisite for the degree, served to invite a measure of opprobrium that was only too apparent, and these conditions were directly responsible for the origin of the American Medical Association, which was designed as a moral uplift to bring about a better state of medical ethics in the land. In 1844 the late Dr. N. S. Davis urged a national convention for the consideration of these problems. The first meeting was held in New York in 1846, and the only Philadelphia school to join in the movement was the Medical Department of the Pennsylvania College, the more recent of the two schools founded by Dr. George McClellan. In the following year, representatives of twenty-eight medical colleges and forty medical societies assembled in Philadelphia. A report on medical ethics was submitted, and a plea for higher educational requirements was made to the colleges. Dr. Nathaniel Chapman of the University of Pennsylvania was the first president, Dr. Alfred Stille one of the two secretaries, and Dr. Isaac Hayes, treasurer. In the tuberculosis crusade, Philadelphia leads all other cities of the Union. The magnificent accomplishments of the Phipps Institute, headed by Dr. Flick, in the past, aided recently by the health departments of the state and city, as well as by the Pennsylvania Society for the Prevention of Tuberculosis, and other agencies make a most impressive showing in humanity's fight against this dread disease. Moreover, there are signs of a public awakening to the possibility of a successful advance on the great white plague, both in the direction of prevention and cure. In conclusion, while Philadelphia is venerable and her medical traditions are an inspiration to the present generation, while her scientific and practical developments have been happily blent with a sound spirit of conservatism, while we owe filial allegiance to the prophetic vision of, and the nourishment continually derived from, the great masters of the past, we must concern ourselves chiefly with the present and the future; and to this end, we must set high standards in the profession, putting aside rivalries of system and petty jealousies, and with sustained earnestness of purpose provide for the advance of theory and practical achievement in the days to come. Along this line I would urge an interchange of professors in the various schools, both at home and abroad—an innovation, to be sure, but one that could be entered on with advantage to professional amity, and thus wield a beneficent influence on the student body, general profession and public alike.

TENNESSEE.

Personal.—Dr. W. Likley Simpson, Memphis, sailed October 3 for Europe.——Dr. Benjamin F. Young, Knoxville, has returned after several months abroad.——Dr. J. McChesney Hogshead, Chattanooga, has been forced temporarily to abandon his practice on account of his health.——Dr. Charles H. Davis has been elected a member of the staff of the Knoxville General Hospital.——Dr. Henry B. Edmondson, Bristol, is ill with melancholia in a sanitarium in Baltimore.

Communicable Diseases.—The reports of the epidemic of diphtheria in Jackson are said to have been exaggerated, as only 8 cases are under treatment at present.——Diphtheria is said to be increasing in Pinson, where the public school has been ordered closed.——Scarlet fever and diphtheria are still

reported to be epidemic in Rockwood, where schools and churches have been closed and public meetings interdicted.—— Diphtheria is said to be increasing in and around Denmark.

GENERAL.

Death of President Gilman.—Daniel Coit Gilman, president emeritus of Johns Hopkins University, Baltimore, and the first president of the Carnegie Institution, died October 13, at Norwich, Conn. Dr. Gilman was particularly interested in the medical department of Johns Hopkins University and aided greatly in the advance of medical education in the United States.

Medical Museum Association.—The second meeting of the International Association of Medical Museums was held in Washington October 1 and 2. Dr. William G. MacCallum, Baltimore, was elected president; Dr. Sims Woodhead, Cambridge, vice-president; and Dr. Maud E. Abbott, Montreal, secretary-treasurer. It was decided to publish a bulletin and an editorial committee consisting of Drs. Aldred S. Warthin, Ann Arbor, Mich.; Dr. Aschhoff, Freiburg, Germany; and Dr. Frederick F. Russell, Washington, with the president and secretary ex-officio, was appointed. Among the subjects discussed at the meeting were "The Exchange of Specimens," "Elevation of the Medical Museum as a Teaching Medium," "Index Pathologicus," "Classification of Specimens," and "Methods of Technic." The next meeting of the association will be held in Boston in April next, following the meeting of the Association of American Pathologists and Bacteriologists.

FOREIGN.

Havana Exchange Enters Its Teens.—The twelfth anniversary of the foundation of the *Revista de Medicina y Cirugia*, of Havana, Cuba, was celebrated September 20 with a banquet, attended by about fifty guests, including C. E. Finlay, Agramonte and Santos Fernandez.

Institutional Provision for Tuberculous in Denmark.—The *Tidsskrift for den Norske Lægeforening* states that the completion of the sanatorium at Nakkebolle gives a larger number of beds in the popular tuberculosis sanatoria than there is *per capita* of the total population in any other country. The sanatoria can accommodate now 1,000.

Statistics of German Sickness Insurance.—The figures for 1906 have just been published and show that nearly twelve million working people were insured, and that four and a half million became incapacitated for work, with a total of 87.5 million days of sickness. The expenses were 264 million marks, while the companies took in 293 millions. The amount paid out in indemnities was 104 million marks, to hospitals and sanatoria 32 million marks, and to physicians 57 million marks ($13,680,000), while 36 million marks were dispensed in medicines.

LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, Sept. 26, 1908.

Exhibition at the Clinical Museum.

Mr. Jonathan Hutchinson is preparing at the Clinical Museum a third classified exhibition of drawings and models of syphilis for which he invites loans. It will be arranged under the heads of primary, secondary and tertiary phenomena. Among other points, special attention will be paid to erratic chancres, the classification and diagnosis of non-indurated sores (ulcus molle), malignant syphilis, frambesial syphilis, serpiginous or lupoid syphilis, syphilis of viscera, ophthalmoscopic conditions, the teeth, histology and parasitism. The exhibition will be open for a month, beginning on October 1.

Legal Obligation to Conduct Labor with Antiseptic Precautions.

A case has been heard at the sheriff's court, Greenock, Scotland, in which the obligation of a doctor to use antiseptics in conducting labor has been decided for the first time in the British Isles. A doctor sought to recover $115 for attending a woman prior to and during her confinement. Her husband made a counter claim for $2,400 for expenses which, he contended, were necessary as the result of carelessness on the part of the doctor. Among the items were a fee of $1,000 for a consultant and $200 for three months' residence at the seaside during convalescence. The counter claim was principally based on the want of antiseptic precautions during labor. In his finding the sheriff stated that it was the usual practice in the medical profession to sterilize the instruments used at a confinement either by boiling or steeping in a solution of carbolic acid or by both methods; that the physician in this case did not sterilize his instruments; on the other hand, the defendant did not prove that the illness from which his wife suffered was caused by the physician's failure to sterilize his instruments or by negligence or want of care or unskilfulness on his part. The sheriff found that it was an implied condition of the physician's contract with the defendant, that he should sterilize his instruments. As he had broken this contract, he was not entitled to payment for his services. As the defendant had failed to prove that his wife's illness was due to the physician's negligence, he was not entitled to any part of his counter claims. The defendant has appealed from this decision.

Fund for Hall Edwards.

The sad case of Mr. Hall Edwards, the pioneer in the use of the *x*-rays in medicine in Great Britain, has been described in previous letters. Both his hands have been amputated for epithelioma following intractable ulcers due to the *x*-rays. The government has lately granted him a civil list pension of $600 per annum. The profession and some of his fellow-townsmen of Birmingham have raised by subscription a fund of $10,000 for his benefit, which on investment yields $400 a year. He has, therefore, an income of $20 a week. This is insufficient to maintain himself and his wife and provide attendance which he requires night and day. A number of influential bankers and financiers in London are raising another fund consisting of donations and annual subscriptions. Promises amounting to $600 annually have already been received. The donations will be invested in the purchase of a life annuity.

Precautions Against Cholera.

In view of the rapid spread of cholera in Russia the local government board has issued a circular to the sanitary authorities of ports throughout the kingdom with a view of preventing admission of the disease. The health officers are asked to keep themselves informed as to the spread of cholera in Russia and especially as to its continuance in the ports where it now exists and its appearance in other ports. The board will afford assistance in this by issuing from time to time a statement of the progress of the epidemic.

The Coal Smoke Abatement Society.

The ninth annual report of this society shows good work in the attempt to free London from the smoke nuisance. During the year 1907, 1,262 case of smoke pollution observed by the society's inspectors were dealt with, and in nearly all cases were reported to the local authorities. An attempt has been made to induce electric, gas and smokeless fuel companies to combine in establishing a permanent exhibition of apparatus and methods for the abatement of smoke from dwelling houses. In industrial concerns the abatement of the smoke nuisance by mechanical apparatus is found to be generally attended with economical working.

Typhoid from Mussels.

An outbreak of typhoid fever that occurred in Norwich this summer has been traced to mussels obtained from Wells, which were found to contain the bacillus coli in large numbers. At Wells the mussel layings were found to be grossly polluted with the sewage of the town. Prompt measures were adopted. Several bags of mussels brought from Wells were destroyed and circulars were issued warning against the consumption of shellfish. As a result a marked reduction in the number of cases of typhoid fever followed. Outbreaks of typhoid fever have recently been traced in other towns to the same cause. In Yarmouth typhoid fever was epidemic for a series of years until in 1900 the sale of mussels from the Yare was prohibited and the number of cases immediately dropped. At Southend the health officer, Dr. Nash, in 1902 reported that there was some connection between the disease and the consumption of shellfish in at least 82 out of 105 cases of typhoid fever. Measures were taken against polluted shellfish, with the result that the number of the population attacked fell from an average of 2.08 per 1,000 of the population during the years 1899 to 1903 to 0.29 in the years 1904 to 1907—a reduction of over 90 per cent.

The Mortality from Tuberculosis.

The annual report of the Registrar-General for Ireland contains an interesting comparison of the death rates from tuberculosis in the various divisions of the British Isles during the years 1864-1906. In 1864 the death rate in England and Wales was 3.3 per 1,000 of the population; in Scotland, 3.6; and in Ireland, 2.4. During the forty-three years which have elapsed the rate in England and Wales has fallen to 1.6. In Scotland the rate rose to 3.9 in 1870-1871 and subsequently declined to

2.1 in 1905 and 1906. In Ireland the rate, which, as shown above, was lower than in the other counties, in 1864 steadily increased—to 2.9 in 1880, from which it fell to 2.7 in 1905, 1906 and 1907. But the Irish rates are not a completely correct measure of the liability of the race to tuberculosis, for they must be affected by the extensive emigration of the youngest and healthiest part of the population.

PARIS LETTER.

(From Our Regular Correspondent.)

PARIS, Sept. 24, 1908.

Depopulation in France.

The word "depopulation" may be understood in an absolute or relative sense; but a nation which is decreasing even only by comparison with its more rapidly increasing neighbors will eventually decrease absolutely. This is the case in France. According to the official census report for 1907, the number of births was 773,969, while the number of deaths was 793,889, making an excess of 19,920 deaths over births. The birth rate has long been steadily declining. Since 1901 the number of births has been less each year than for the preceding year.

For 1902, the decrease was	11,896
For 1903, the decrease was	18,606
For 1904, the decrease was	8,483
For 1905, the decrease was	10,928
For 1906, the decrease was	444
For 1907, the decrease was	32,878

As the mortality has by no means been diminishing at the same rate, the arrival of a time when the birth rate should fall below the death rate was inevitable. The declining birth rate is, indeed, far from peculiar to France; it has been noted in almost all countries of Europe. Only a few weeks ago your Berlin correspondent gave some instructive figures in regard to Germany. The phenomenon is the result of general causes, among which the progressive development of manufacturing industries and of means of communication and the immigration of the rural population to the large cities are conspicuous. It must be admitted, however, that in France the evil is more serious than elsewhere. What are the causes? Some believe that the warfare on religious ideas in France is responsible. The Christian religion has always condemned severely the evil practices which destroy life at its source, and that is why provinces like Brittany, where the religious sentiment has made the best stand, also have the highest birth rate.

Without denying the importance of this factor, however, it must be recognized that there are many other causes inherent in the mode of life and thinking peculiar to France or at least more accentuated in France than elsewhere. Individualism is the basis of the modern French mental makeup. De Foville says bitterly that ambition, vanity, the craving to show off, to enjoy and to possess, are the motives to which our countrymen are constantly yielding more and more. The thirst for prosperity increases with prosperity itself. Every one seeks to enrich himself at all hazards, and children, with all the expenses that they bring, are dreaded. Then, too, many of the French are more ambitious for their descendants than for themselves, and, for the sake of the first-born, they are unwilling that he should have brothers or sisters. Moreover, at school and everywhere else, thrift and economy are inculcated. People are beginning to perceive now that this has been carried too far, for it is for the sake of thrift and economy that the French restrict the size of their families.

These causes have contributed to the success of an abominable propaganda organized under the deceptive name of "leagues of regeneration." These leagues preach the right of abortion and teach young women that they may employ those vile means which, without requiring the privations entailed by the "moral restraint" of Malthus, promise the same results. A news item of recent date indicates the extent of the evil. It states that there has just been arrested at Cambrai, in the north of France, an old man of 76, known as the "Friend of the People," who earned this title by producing several thousand abortions.

LEGISLATION AS A POSSIBLE REMEDY.

Legislative interference might remedy the condition to some extent, especially modifications of the tax laws. Families with several children are now grievously overtaxed, and unfortunately, the income tax bill now under debate makes no discrimination between the bachelor and the father of ten children.

Increase in the Number of Marriages in 1907.

Skeptics refuse to admit that legislation can furnish any remedy for depopulation, but the statistics in regard to marriages testify to the contrary. There were in 1907 more marriages than ever before, a total of 314,908 marriages, 8,221 more than the previous year. This abrupt and considerable increase is due solely to the law of June 21, 1907, simplifying appreciably the formalities of marriage, which are more complicated in France than in any other country. The fact that the increase dates from July, and has continued into 1908, proves that it is the result of the law.

Physicians and the Income Tax.

Medical opinion in France is distinctly hostile to the Caillaux income-tax bill now under discussion. The well-grounded objections urged against this bill are that it would considerably increase the taxes now incumbent on the members of our profession, and would compel them to violate professional secrecy by making a detailed statement of their receipts. In case of any protest against the assessment it would be necessary for the physician to exhibit his books; and in some cases the nature of the patient's disease might be inferred from the records. Moreover, no one should know the number of times a year that a given individual is obliged to consult a physician.

Another flaw in the bill is the fact that it does not clearly require that professional medical expenses, such as expenses for carriage, for servants employed on professional business, and rent should be deducted from the gross receipts before the tax is assessed.

The Congress of Practitioners has therefore passed a resolution asking for modifications in the bill. M. Caillaux, the Minister of Finance, has received favorably the representations of the representatives of the medical profession, and it may be hoped that the legislative branch will give them consideration.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Oct. 1, 1908.

Modernization of the Study of Veterinary Medicine.

The conditions under which veterinary medicine has been taught hitherto in this country have been humiliating to the students, for the veterinary college did not rank with the medical college, and the graduates of the former could not gain the degree of doctor, although on the continent veterinary graduates do obtain this degree as a rule. Furthermore, the veterinary college was under military management. Most veterinary surgeons were bound to serve three to five years in the army after graduation. The veterinary students some time ago petitioned the ministry of education to take them in charge instead of the ministry of war. The failure of their hopes finally caused a strike, and it would have been necessary to close the college for lack of students unless a change had been made. Public interest was at last aroused, and a commission of investigation was appointed, which rendered a brief and simple verdict: "The college is not equipped for study or for scientific research." As a result, the college will be granted more space; military control will soon cease; and the veterinary graduate will be entitled to receive the degree of doctor of veterinary science on producing a certificate of graduation from a veterinary college, passing an examination on two subjects of veterinary medicine, and offering a scientific dissertation on any subject in his curriculum. A fee of 180 crowns ($36) is to be paid for the diploma, while the tuition fee for each six months' term has been fixed at 50 crowns ($10). Veterinary bacteriology and pathology will be taught in the medical pathologic institute until the sites for new buildings are obtained. Veterinary science will profit much by this reform, which comes into force this winter.

An Interesting Decision on Criminal Abortion.

The legal decision in the following recent case has been much commented on in medical circles: A girl in the seventh month of pregnancy was suddenly seized with pains, and by the aid of a midwife was delivered of a hydatid mole. The local registrar was not notified. As notification of births is compulsory in this country, both woman were imprisoned on suspicion of criminal abortion when a medical man, who was called in afterward, insisted on notification. The judge's decision was that although the girl had not been delivered of a human being, yet the fact that she had confessedly used some means to procure premature emptying of the uterus, without exact knowledge of its abnormal contents, made her action criminal. The omission to give notification of the delivery itself constituted a breach of the law. The penalty was three weeks of hard labor for each woman; but they were later released, pending the result of a petition for mercy.

Pharmacology

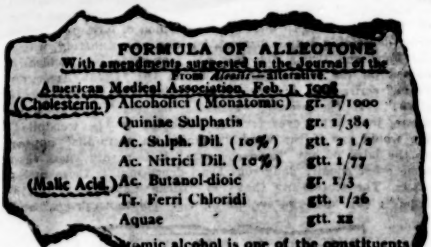
ALLEOTONE.

The Commercial Value of Adverse Criticism.

For skillful attempts to convert a "knock" into a "boost," commend to us the discredited nostrum exploiter. The federal Food and Drugs Act did much to bring out this amiable quality—possibly developed it. While somewhat ancient history, it is well to call to mind what happened when the excise authorities insisted either that the "patent medicine" booze, Peruna, have some medicine put in it, or else that its manufacturers should go into the saloon business. Hartman at once got out a new label stating that "for a number of years a multitude of grateful friends" had urged "that Peruna be given a slight laxative quality." Thenceforth the innocents and near-innocents could get their perunaese jag only at the risk of a "bad quarter of an hour."

One of the latest attempts to wriggle out of an uncomfortable position, and at the same time make capital out of the wriggling, is seen in the advertising of Alleotone, a nostrum of the pseudo-scientific type, which was shown up in THE JOURNAL of Feb. 1, 1908. The "formula" furnished is for the most part a jargon of misleading and mystifying nonsense and fulfills the same purpose as the voluble "patter" of the gentleman who is manipulating three shells and a pea at the county fair.

Every constituent of the "formula" was discussed in THE JOURNAL and the absurdities and impossibilities of each dwelt on. Did the manufacturers of Alleotone feel downcast over the exposure of their humbug? Not to judge by their advertising, for they write to physicians that "since the A. M. A. analyzed Alleotone it has made great strides"—direction not specified. But the choicest piece of impudence, and one that but for its dishonesty would be laughable, is found in this portion of their advertising pamphlet:


FORMULA OF ALLEOTONE
With amendments suggested in the Journal of the
From *Alienist*—literative.
American Medical Association, Feb. 1, 1908.
(Cholesterin.) Alcoholici (Monatomic) gr. 1/1000
Quinine Sulphatis gr. 1/384
Ac. Sulph. Dil. (10%) gtt. 2 1/2
Ac. Nitrici Dil. (10%) gtt. 1/77
(Malic Acid.) Ac. Butanol-dioic gr. 1/3
Tr. Ferri Chloridi gtt. 1/26
Aquae gtt. xx
omic alcohol is one of the constituents
: "it is a ct of the re

In the original, the words "With amendments suggested in the Journal of the American Medical Association, Feb. 1, 1908," and also "(Cholesterin.)" and "(Malic Acid.)," which we have underscored in the illustration, are printed in red and have been added to the original "formula." Such are the uses of adversity.

What claim, if any, the exploiter of this nostrum—B. F. Copeland—has to medical or pharmaceutical knowledge, we do not know. In fact, to be consistent with the "ethics" of the nostrum business he need have none. Such knowledge, indeed, tends to hamper that free play of the imagination so necessary in this work. We understand that he has at different times been in charge of a stave factory and connected with a brokerage firm, which may exert some subtle influence in developing the ability to relieve suffering humanity, though the connection is not quite clear. One would imagine, however, that the keen business instinct, untrammeled by any considerations of conscience, which is exhibited in the exploitation of Alleotone, would in purely commercial pursuits have long since assured a competence.

CAPUDINE.

Another of "The Subtle Poisons."

A great many inquiries reach the Association's laboratory regarding various nostrums and "patent medicines" with requests for analyses, but the number of preparations thus brought to notice is so great that it would take an army of chemists to satisfy all inquiries. As it is, only such preparations are examined as will serve as examples of a class of nostrums which it is desired to expose or that are of special interest to the profession. Hicks' Capudine Cure—or as it is known to physicians "Elixir Capu-Hicks"—is one of such examples, and its investigation has been deemed advisable.

MANUFACTURERS' CLAIMS.

The manufacturers—the Capudine Chemical Company, Raleigh, N. C.—issue two kinds of advertising pamphlets—one for physicians and another for the public. The medical profession is told that Capudine is

> "especially recommended for the relief of all headaches, colds, la grippe, neuralgia, sick headache, nervous headache, acidity, flatulency, and indigestion pains, also for dysmenorrhea, after pains, etc."

A formula of the type that usually accompanies preparations of this character is given:

> "Elixir Capu is composed of the combined Bromids of Potassium, Sodium and Ammonium, Caffein, Capu, Elixir Peppermint, Adjuvants and Correctives, Syrup and water, q. s."

To elucidate further and for the information of those who have never heard of the substance capu, we are told:

> "Capu is a cellulin product—Chemical formula $C_{20}H_{30}N_2O_5$ possessing very powerful analgesic properties and is a mild antipyretic."

In a "Laundry List" pamphlet extolling the virtues of the remedy, the public are informed that

> "Hicks' Capudine CURES all headaches, indigestion, la grippe, colds, etc."
>
> "No remedy ever placed before a suffering mortal has the wonderfully quick curative powers of Capudine."
>
> "Hicks' Capudine is not a 'dope'; will not produce a habit."
>
> "Try this splendid remedy and enjoy life once more."
>
> "Capudine is a liquid, acts immediately and is sold by dose at soda founts, and in 10, 25 and 50c bottles at drug stores."

LABORATORY FINDINGS.

Capudine (whether in the form of Elixir Capu-Hicks, or as Hicks' Capudine Cure) is a brown, rather syrupy liquid, slightly alkaline to litmus, with an aromatic odor and a salty taste. Besides 8 per cent. of alcohol, Capudine was found to contain sugar, aromatics, chlorids, caffein, antipyrin and salicylates. Quantitative estimations demonstrated the presence of about 1.25 gm. (19 grains) of antipyrin and caffein to each fluid ounce, and salicylates equivalent to about 0.9 gm. (14 grains) of salicylic acid to each fluid ounce. Thus Capudine depends for its action principally on antipyrin.

COMMENTS.

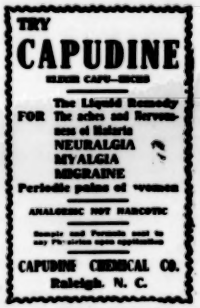
As a barefaced attempt to exploit, at the same time and with the same preparation, both the medical profession and the public, this nostrum is probably preëminent in the annals of the "patent medicine" business—a business whose claims to deceit and mendacity are already high. That medical journals should aid and abet such methods would seem unbelievable. Testimonials are forthcoming, of course. In the pamphlet to the laity, these come from the butcher the baker and the candlestick maker, while in the "literature" to physicians, at least some of the testimonials—"case histories," if you please!—come, it is needless to say, from our old testimonio-maniac friend, W. T. Marrs,[1] M.D., of Peoria Heights, Ill. As Dr. Marrs has recommended, at various stages of his literary career, such remedies as Neurilla, Antikamnia, Bromidia, Chionia, Arsenauro, Cactina Pillets, Thialion, Phenoseptine, Papine, Calcidin and others too numerous to mention, his opinion regarding Capudine must be considered authoritative. Dr. A. S. Reed of Naples, Maine, also details a "case history" in which the marvelous results achieved by the administration

1. See THE JOURNAL, March 14, 1907, p. 897.

of Capudine are surpassed only by the still more marvelous spelling and composition of the testimonial.

In the lay press we find Capudine extensively adverstised in the typical "patent medicine" style. In the "Laundry List" pamphlet, previously referred to, which goes direct to the public, there are graphically portrayed some of the conditions in which Capudine is indicated.

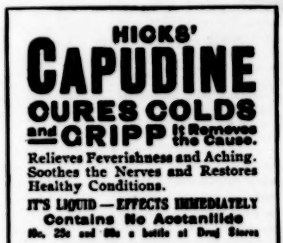
For the purpose of determining the attitude of the Capudine Chemical Company regarding its policy of combining the "patent medicine" and "ethical proprietary" business in one and the same preparation, a Chicago physician wrote, asking if it made any particular difference whether he wrote a prescription for Elixir Capu-Hicks or told his patients to go to the drug store and ask for a bottle of Hicks' Capudine Cure.



Reproduction (reduced of an advertisement of Capudine in a medical journal (*Medical Summary*). In this way the physician is reached.

The Capudine Chemical Company rose gracefully to the bait and swallowed it hook and line. The answer, dated Sept. 28, 1908, is so ingenuous and enlightening that we give it almost in full. For the purpose of emphasizing certain passages we have employed italics and small capitals:

> "We use the name Elixir Capu-Hicks so that doctors can write for it and have their prescriptions filled *without the consumer knowing that it is the same thing as the advertised product*. A great many of our doctor friends prefer this.
>
> "In regard to the cost to the druggist it is the same and we presume that MOST DRUGGISTS DISPENSE CAPUDINE BY THE DOSE OVER THE COUNTER AND ELIXIR CAPU-HICKS ON PRESCRIPTION FROM THE SAME ONE-PINT OR ONE-GALLON BOTTLE OF CAPUDINE, WHICH IS PERFECTLY ALL RIGHT. [!!] Though some of our drug friends buy it labeled as Elixir Capu-Hicks specially for their prescription trade."


HICKS'
CAPUDINE
OURES COLDS
and GRIPP It Removes the Cause.
Relieves Feverishness and Aching.
Soothes the Nerves and Restores Healthy Conditions.
IT'S LIQUID — EFFECTS IMMEDIATELY
Contains No Acetanilide
10c, 25c and 50c a bottle at Drug Stores

Reproduction of an advertisement to the public appearing in a religious publication, the *Baptist Flag*. This paper, to which we have referred before, expatiates on the need of pure reading—in its editorial pages—and exhibits filthy indecencies in its advertisements.

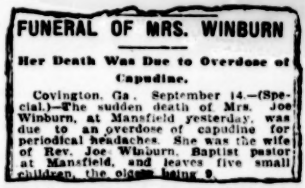
"Perfectly all right" indeed! What though you deceive your patient, stultify yourself and use your druggist as a catspaw; just so you increase the sale of Capudine it "is perfectly all right"—for the Capudine Chemical Company.

The formula furnished physicians is, of course, a joke. The various ingredients given—without quantities—are, with the exceptions of Capu, well-known drugs. Capu is not so well known; in fact, its circle of acquaintances is limited to the Capudine Chemical Company. According to the company (and if it doesn't know, who does?) "capu is a cellulin product—chemical formula $C_{30}H_{50}N_2O_6$." This looks abstruse and scientific, and doubtless in many cases prevents further impertinent and awkward questions. The description only lacks one thing to prevent it qualifying for an honored position in the hall of fakes—a "structural formula" of weird and impressive design. The great unknown—Capu—is, of course, as the analysis demonstrates, our old friend antipyrin. On the "literature" furnished physicians and on the advertising distributed to the

HICKS' CAPUDINE CURES
PERIODIC PAINS.
HEADACHES, BACKACHES, NERVOUS EXHAUSTION which frequently accompany menstruation are quickly relieved by Capudine. Nature certainly in-

Diagnosis and treatment in the home! Reproduced from the "Laundry List" pamphlet sent out to the public.

public, great stress is laid on the fact that Capudine "contains no acetanilid." This puts the nostrum in that dangerous class of "patent medicines," increasingly common of late, in which a heart-depressing drug is present, but one, unfortunately, which the Food and Drugs Act does not require to be specifically named on the label. Mr. Adams in the "Great American Fraud" series says, in speaking of the labels on "patent medicines:" "If the words 'warranted harmless' appear anywhere, look twice over for the Ethiopian in the woodpile." We would say if the words "contains no acetanilid" appear on the label of any "headache cure," it is a safe guess that some other equally dangerous heart-depressant is there in its place. The statements that (1) "Hicks' Capudine is not a 'dope'"; (2) "does not contain . . . poisonous drugs," and


FUNERAL OF MRS. WINBURN
Her Death Was Due to Overdose of Capudine.
Covington, Ga., September 14.—(Special.)—The sudden death of Mrs. Joe Winburn, at Mansfield yesterday, was due to an overdose of capudine for periodical headaches. She was the wife of Rev. Joe Winburn, Baptist pastor at Mansfield, and leaves five small children, the eldest being 9.

Reproduction from the Atlanta (Ga.) *Constitution*, Sept. 15, 1908, which gives the lie direct to the statement that Capudine "does not contain poisonous drugs."

(3) "will not produce a habit," are three separate and distinct falsehoods. As to its "harmlessness," a telegram that appeared in the Atlanta (Ga.) *Constitution*, which we reproduce, refutes briefly but tragically, this cruel lie. Dr. E. W. Warren of Palatka, Fla., reports the case of a woman who was thought to have been murdered, but the state's attorney concluded that her death was caused by too much Capudine.

And this hybrid "'patent medicine'-proprietary" is to be found advertised in medical journals! How much longer will the medical profession put up with it?

Proprietary House Insolvent—and Physicians Lose?

The Pas Avena Chemical Company, whose product, Pas Avena, was exposed in THE JOURNAL a few months ago, has recently failed, according to our pharmaceutical exchanges. In recording the fact, one journal says:

> "It is reported that considerable stock of this company had been sold to physicians."

At this time, when physicians are importuned daily to invest money in various wildcat pharmaceutical concerns, this sentence might well be used "to point a moral or adorn a tale."

Correspondence

Plague in Ground Squirrels.

SAN FRANCISCO, Oct. 6, 1908.

To the Editor:—I have just seen the editorial in THE JOURNAL, Oct. 3, 1908, on "The Present Pandemic of Plague," in which you refer to my work in establishing the existence of plague in the ground squirrel.

I would call attention to the fact that in the issue of Public Health Reports referred to (Sept. 11, 1908), the following statement is to be found after the reference to my own report on a plague-infected ground squirrel: "Practically the same findings have been obtained by Acting Assistant Surgeon Wherry in the Oakland laboratory, and are reported under date of Aug. 24, 1908."

Under a wise order of Passed Assistant-Surgeon Blue, who commands all antiplague operations in this vicinity, all cases of suspected plague in persons or in rodents are investigated by two bacteriologists. Acting under this order Acting Assistant-Surgeon W. B. Wherry and myself, working independently, demonstrated the presence of the plague bacillus in all the squirrels that have been proven to be infected. Proper credit for this work should be given to Dr. Wherry, who, as shown by the Public Health Reports, made his report on the subject on Aug. 24, 1908, three days earlier than my own report, which was dated Aug. 27, 1908.

GEORGE W. McCOY, P. A. Surgeon.

401 Fillmore Street.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

HYPODERMIC USE OF MERCURY IN TUBERCULOSIS.

ALLIANCE, Neb., Sept. 3, 1908.

To the Editor:—Please give me information relative to the hypodermic use of mercury in tuberculosis.

What preparation of mercury would give the best results?

C. E. SLAGLE.

ANSWER.—This method has been advocated by Dr. B. L. Wright, U. S. Navy. In a recent article (*U. S. Naval Medical Bulletin*, July, 1908), he gives the following description of the technic:

"The preparation of mercury used is hydrargyrum succinimidum. Just before the injections are to be given distilled water is boiled for at least twenty minutes. A solution is then made so that 0.64 c.c. (min. x) will be equivalent to gram 0.013 (1/5 gr.) of mercury succinimide. The syringes and needles are boiled for twenty minutes.

"The skin of the patient's buttocks is scrubbed with hot water and tincture of green soap, then washed with alcohol, followed by ether, and this in turn by a solution of bichlorid of mercury (1 to 3,000). The surgeon's hands are prepared as for any operation, and sterilized rubber gloves are worn. The patient being in a prone position on the table, the needle is driven deeply into muscle tissue by a quick downward plunge. If no blood escapes from the butt of the needle the syringe is put in place and the drug is injected. If blood escapes a vein has been punctured and the needle is therefore withdrawn and inserted at another place.

"It has been our custom to start with gram 0.013 (1/5 gr.) of the drug, and to repeat the injection every other day until 15 injections have been given; then to give gram 0.026 (2/5 gr.) every fourth day until fifteen more injections have been administered; then to give gram 0.039 (3/5 gr.) once a week indefinitely. It is advantageous in some cases to give short courses of potassium iodid at varying intervals in conjunction with the mercury.

"The above procedure can not be considered a hard-and-fast rule of routine, for some cases require larger doses and some smaller, and in this the physician must be guided by experience and close observation."

In a later article Wright says (*New York Medical Journal*, August 29, 1908):

"Since the publication of my second report we have modified the procedure for the administration of mercury as follows: We now give an injection every other day until thirty injections have been given, then follow by a two weeks' course of potassium iodid, grammes 0.64 (10 grains) thrice a day, then one week's rest from medication, after which we resume the injection and repeat. This is giving us the most satisfactory results."

Good results are reported by Wright, but the method must be regarded as still on trial.

PRESCRIPTION LATIN.

KENTUCKY, Oct. 2, 1908.

To the Editor:—The following prescription is copied from "Ortner's Treatment of Internal Diseases" (Page 39.):

R.	gm.	
Hydrarg. chloridi mitis	20	gr. iii
Sacchar. lactis	40	gr. vi

Dent. tal. dos. No. ix xii.

M. Fiat. Pulv. No. i.

Sig.: Three powders daily.

Please give the Latin in full of the words "Dent. tal. dos." and the translation in English. B. D.

ANSWER.—The abbreviated Latin words stand for *dentur tales doses numero novem—duodecim*, and mean, "Let there be given similar doses in number 9 to 12;" in other words, the druggist is instructed to send from 9 to 12 powders such as the one for which the prescription is written. This formula is, we believe, more common among German than English-speaking physicians. The latter are more prone to write simply "mitte ix-xii, i.e., "Send from nine to twelve (such powders)".

BEEF PICKLE.

——, ILL., Oct. 9, 1908.

To the Editor:—I am asked about a recipe for pickle for beef, which is as follows: To 1 gallon of water add 1½ pounds of salt, ½ pound of sugar, 6 ounces of saltpeter and ¼ pound of potash. Please tell me what kind of potash should be used. Could I use caustic potash? J. W. H.

ANSWER.—The kind of potash intended in the recipe is probably potassium carbonate, which possibly might be used on the meat without danger if it were well washed out before the meat was eaten. Caustic potash in the amount named would make a mixture of about the strength of the liquor potassii hydroxidi and would be poisonous. We do not see the reason for the addition of "potash" in this recipe and consider it objectionable.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Oct. 10, 1908:

Hoff, John Van R., colonel, Med. Corps, relieved from duty in the Philippines Division Dec. 3, 1908, and ordered to proceed to San Francisco for further orders.

Stephenson, William, and Phillips, John L., majors, Med. Corps, having completed their examination for promotion at Washington, D. C., ordered to return to their proper stations.

Mahee, James L., captain, Med. Corps, granted an extension of two months to his leave of absence.

Havard, Valery, colonel, and Lynch, Charles, major, Med. Corps, detailed to represent the medical department of the Army at the meeting of the Association of Military Surgeons, at Atlanta, Ga., Oct. 13 to 16, 1908.

Kean, Jefferson R., major, Med. Corps, detailed to represent the medical department of the Army at the meeting of the Association of Military Surgeons, at Atlanta, Ga., Oct. 13 to 16, 1908, and on completion of that duty to rejoin his station in Cuba, he having completed the duty for which he was ordered to the United States.

Snyder, Craig R., captain, Med. Corps, granted leave of absence for one month.

Harris, Jesse R., captain, Med. Department, granted an extension of twelve days to his leave of absence.

Dutcher, Basil H., major, Med. Corps, ordered to duty at Plattsburg Barracks, N. Y., at the expiration of his present leave of absence.

Freeman, Paul L., captain, Med. Corps, granted leave of absence for ten days.

Ford, Clyde S., captain, Med. Corps, relieved from duty in the Philippines Division June 15, 1909, and ordered to the United States; granted six months leave of absence about Dec. 15, 1908, with permission to go beyond the sea.

Schler, Anton R., first lieutenant, Med. Res. Corps, honorably discharged from the service of the United States.

Slayter, John T. H., first lieutenant, Med. Res. Corps, ordered to proceed from Fort William Henry Harrison, Montana, to his home, Cambridge, Mass., and await orders.

Barney, Fred M., first lieutenant, Med. Res. Corps, ordered from Fort Myer, Va., to Fort McHenry, Md., for temporary duty.

Bayley, Edmund W., first lieutenant, Med. Res. Corps, granted leave of absence for one month.

Foley, Thomas M., first lieutenant, Med. Res. Corps, assigned to active duty and ordered to Fort Moultrie, S. C., for duty.

Bowman, Madison M., first lieutenant, and Patterson, Edwin W., first lieutenant Med. Res. Corps, relieved from duty in the Philippines Division and ordered to the United States for station.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending, Oct. 10, 1908:

Pollard, J. B., Dodge, A. H., Cottle, G. F., Mann, W. L., asst.-surgeons, appointed assist.-surgeons from Oct. 3, 1908; ordered to course of instruction at the Naval Medical School, Washington, D. C.

de Figaniere, P. A., acting asst.-surgeon, appointed acting asst.-surgeon from Oct. 3, 1908; ordered to course of instruction at the Naval Medical School, Washington, D. C.

Freeman, G. F., surgeon, commissioned surgeon from Aug. 2, 1908.

Murphy, J. A., surgeon, ordered to the *Franklin*.

Snyder, J. J., surgeon, unexpired portion of leave revoked, detached from the *Franklin* and ordered to the Marine Recruiting Station, Philadelphia.

Farwell, W. G., passed asst.-surgeon, detached from the Marine Recruiting Station, Philadelphia, and ordered to duty at the Naval Hospital, Philadelphia.

Orders issued by Commander, Third Squadron, Pacific Fleet.)

Smith, H. L., asst.-surgeon, detached from the *Missouri* and ordered to the *Villalobos*.

Higgins, M. E., asst.-surgeon, detached from the *Illinois* and ordered to the Naval Hospital, Canacao, P. I.

Koltes, F. X., asst.-surgeon, detached from the *Connecticut* and ordered to the *Wilmington*.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 7, 1908:

White, J. H., surgeon, detailed to represent the service at the meeting of the Southern Medical Association at Atlanta, Georgia, Nov. 10-12, 1908.

Carrington, P. M., surgeon, directed to report at the Bureau on special temporary duty, Oct. 3, 1908. Relieved from special temporary duty at Washington, D. C., Oct. 6, 1908. Detailed to represent the service at the Association of Military Surgeons at Atlanta, Ga., Oct. 13-16, 1908. Granted six days' leave of absence while en route to join station.

Wertenbaker, C. P., surgeon, detailed to represent the service at the Association of Military Surgeons at Atlanta, Ga., Oct. 13-16, 1908. Granted seven days' leave of absence from Oct. 5, 1908.

White, M. J., passed asst.-surgeon, detailed to represent the service at the Association of Military Surgeons at Atlanta, Ga., Oct. 13-16, 1908.

Bryan, W. M., asst.-surgeon, granted thirty days' leave of absence from Nov. 1, 1908.

Blanchard, J. F., acting asst.-surgeon, granted two days' leave of absence, from Oct. 7, 1908, under Paragraph 210, Service Regulations.

Earl F. D., acting asst.-surgeon, granted seven days' leave of absence from Oct. 7, 1908, and excused without pay for two days, from Oct. 14, 1908.

Goldsborough, B. W., acting asst.-surgeon, leave of absence for five days granted Sept. 16, 1908, amended to read three days.

Lewis, F. S., acting asst.-surgeon, granted six weeks' leave of absence from Sept. 20, 1908.

Marsellan, C. J., acting asst.-surgeon, granted thirty days' extension of annual leave, from July 21, 1908, on account of sickness and twenty-five days' leave from Aug. 20, 1908.

Riddon, J. R., acting asst.-surgeon, directed to proceed to Stapleton, N. Y., for duty, reporting to commanding officer Marine Hospital.

Walker, R. T., acting asst.-surgeon, granted four days' leave of absence, from Oct. 26, 1908, under Paragraph 210, Service Regulations.

Wetmore, W. O., acting asst.-surgeon granted three days' leave of absence, from Sept. 10, 1908, under Paragraph 210, Service Regulations.

APPOINTMENT.

Doctor J. R. Riddon appointed an acting asst.-surgeon, for duty at Stapleton, New York, Sept. 30, 1908.

BOARDS CONVENED.

Board of medical officers convened to meet at the Marine Hospital, Chicago, Oct. 7, 1908, for the purpose of making a physical examination of an applicant for the position of cadet in the revenue cutter service: Surgeon G. B. Young, chairman; Asst.-Surgeon C. E. Wood, recorder.

Board of medical officers convened to meet at the Marine Hospital, Savannah, Ga., Oct. 7, 1908, for the purpose of making a physical examination of an applicant for the position of cadet in the revenue cutter service: Surgeon F. W. Mead, chairman; Acting Asst.-Surgeon A. B. Cleborne, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 9, 1908:

SMALLPOX—UNITED STATES.

California: Berkeley, Sept. 12-19, 1 case.
Indiana: Indianapolis, Sept. 13-20, 1 case; Lafayette, Sept. 14-21, 1 case; South Bend Sept. 19-26, 1 case.
Kansas: Topeka, Sept. 12-19, 1 case.
New York: New York, Sept. 19-26, 1 death.
Ohio: Cincinnati, Sept. 18-25, 1 case.
Tennessee: Nashville, Sept. 19-26, 1 case.
Washington: Spokane, Sept. 5-19, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Aug. 8-22, 12 cases, 6 deaths.

SMALLPOX—FOREIGN.

Aden: Aden, Aug. 24-31, 5 deaths.
Brazil: Rio de Janeiro, Aug. 15-23, 751 cases, 36 deaths; Santos, Sept. 15-22, 16 cases, 3 deaths.
Canada: Halifax, Sept. 12-19, 1 case.
Ceylon: Colombo, Aug. 8-15, 3 cases, 1 death.
Ecuador: Guayaquil, Aug. 15-29, 9 deaths.
Egypt: Cairo, Aug. 25-Sept. 2, 3 cases, 1 death.
India: Bombay, Aug. 18-25, 4 deaths; Calcutta, Aug. 8-15, 6 deaths.
Italy: General, Sept. 6-13, 5 cases; Naples, Sept. 13-20, 5 cases, 1 death; Piscinola, 11 cases, 1 death.
Mexico: Aguascalientes, Aug. 13-20, 1 case; Mexico City, July 25-Aug. 8, 21 deaths.
Norway: Christiania, Aug. 29-Sept. 5, 24 cases, 2 deaths.
Peru: Callao, Sept. 8, 30 cases.
Russia: Warsaw, July 25-Aug. 8, 14 deaths.
Turkey: Bagdad, Aug. 22-29, 22 cases, 6 deaths; Constantinople, Aug. 30-Sept. 6, 8 deaths.

YELLOW FEVER.

Brazil: Manaos, Aug. 22-29, 1 death; Para, Sept. 5-12, 1 death.
Ecuador: Guayaquil, Aug. 16-22, 1 death.
Mexico: Vera Cruz, Oct. 2-7, 5 cases.
Martinique: Fort de France, Sept. 5-12, 5 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 8-22, 10 cases, 10 deaths; provinces, Aug. 8-22, 1,729 cases, 1,186 deaths.

CHOLERA—FOREIGN.

China: Hankau, to Aug. 18, 1,397 cases, 1,397 deaths; Hanyang, to Aug. 18, 200 deaths; Hongkong, Aug. 15-22, 3 cases, 3 deaths; Shanghai, Sept. 1, present; Wuchang, to Aug. 18, 2,140 deaths.
India: Bombay, Aug. 18-25, 1 death; Calcutta, Aug. 8-15, 13 deaths; Madras, Aug. 15-21, 79 deaths.
Indo-China: Cholen, Aug. 8-15, 4 cases, 4 deaths.
Japan: Moji, Sept. 4, 8 cases, 3 deaths.
Russia: St. Petersburg, to Sept. 19, 2,018 cases, 620 deaths.

PLAGUE.

Azores: Fayal, to Sept. 21, 9 cases, 4 deaths; Terceira, to Sept. 21, 51 cases, 20 deaths.
Brazil: Rio de Janeiro, Aug. 16-23, 1 case.
Chile: Iquique, Sept. 1-8, 4 cases, 3 deaths.
China: Hongkong, Aug. 15-22, 3 cases, 23 deaths; (20 deaths, April to July, in Chinese hospital not previously reported).
Ecuador: Guayaquil, Aug. 22-29, 1 death.
India: General, Aug. 15-22, 1,578 cases, 1,015 deaths; Bombay, Aug. 18-25, 26 deaths; Calcutta, Aug. 8-15, 14 deaths; Rangoon, Aug. 8-15, 35 deaths.
Indo-China: Cholen, Aug. 8-15, 13 cases, 13 deaths; Anigon, Aug. 8-15, 4 cases, 4 deaths.
Japan: Awaji Island, Sept. 7, 7 cases, 3 deaths; Kobe, Aug. 29; Sept. 5, 4 cases, 1 death.
Peru: General, Aug. 25-31, 22 cases, 9 deaths; Callao, Aug. 25-Sept. 2, 1 case; Lima, Aug. 25-Sept. 2, 4 cases.
Trinidad: Sept. 30, 1 case, 1 death.
Turkey in Asia: Bagdad, Aug. 22-29, 1 case, 1 death.
NOTE.—Plague at Trieste, Austria, September 21, denied.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 21-23. Secretary, Dr. J. A. Egan, Springfield.

INDIANA Board of Medical Registration and Examination, Room 129, State House, Indianapolis, October 27. Secretary, Dr. W. T. Goff, Room 129, State House, Indianapolis.

NEVADA State Board of Medical Examiners, Carson City, November 2. Secretary, Dr. S. L. Lee, Carson City.

LOUISIANA Homeopathic Medical Board, 919 St. Charles street, New Orleans, November 2. Secretary, Dr. Gayle Aiken, 1102 St. Charles avenue, New Orleans.

NEBRASKA State Board of Health, Capitol Bldg., Lincoln, November 4-5. Secretary, Dr. E. J. C. Sward, Oakland.

TEXAS State Board of Medical Examiners, Houston, November 10. Secretary, Dr. M. E. Daniel, Honey Grove.

CONNECTICUT Homeopathic Medical Board, New Haven, November 10. Secretary, Dr. Edwin C. M. Hall, 82 Grand avenue, New Haven.

CONNECTICUT Eclectic Medical Board, Hotel Garde, New Haven, November 10. Secretary, Dr. T. S. Dodge, Torrington.

CONNECTICUT State Medical Examining Board, City Hall, New Haven, November 10-11. Secretary, Dr. Charles A. Tuttle, 196 York street, New Haven.

MAINE Board of Registration of Medicine, Preble House, Portland, November 10-11. Secretary, Dr. William J. Maybury, Saco.

FLORIDA Regular Board of Medical Examiners, Jacksonville, November 11-12. Dr. J. D. Fernandez, Jacksonville.

WEST VIRGINIA State Board of Health, Wheeling, November 10-12. Secretary, Dr. H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 23-25. Secretary, Dr. J. A. B. Adcock, Warrensburg.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 10-12. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

The Texas Examining Boards.

WACO, TEXAS, Oct. 5, 1908.

To the Editor:—My attention has just been called to the following statement in Texas news, on page 699 of THE JOURNAL, February 29: "It is claimed that many irregularities

have been discovered on the part of the old boards of examiners operating under the law of 1901."

Again, April 11, on page 1901, the following appears: "Sale of Medical Certificates.—J. J. Davis, special agent of the state medical board, is said to have filed a complaint against a Denison physician, the charge growing out of the disposition of certificates from the old medical board which was in existence prior to July 12, 1907, when the present medical act went into effect. Large numbers of these certificates, which had been ordered to be destroyed, were, it is said, sold to persons who desired to practice medicine, bringing prices ranging from $50 to $500."

The Texas legislature in 1901 enacted a law creating three separate boards of medical examiners, to wit: The State Board of Medical Examiners (regular), the Homeopathic State Board of Medical Examiners, and the Eclectic State Board of Medical Examiners. This act was repealed by the thirtieth legislature, which created a single board, this law going into effect July 13, 1907.

In justice to the State Board of Medical Examiners (regular), mentioned above, acting under the law of 1901, I desire to state that there is nothing in the records of this office showing that the conduct of that board has been the least reprehensible. G. B. FOSCUE, M.D.

Reciprocity Regulations in Louisiana.

In accordance with the recent amendment to the medical practice act providing for reciprocity, the Louisiana State Board of Medical Examiners held a meeting Tuesday, September 29, and adopted the following resolutions:

"On and after Oct. 1, 1908, the Louisiana State Board of Medical Examiners will grant a license, without examination, to applicants who will comply with the following conditions:

"1. They must appear in person before the board.

"2. They must present a diploma from a college rated as Class A by this board (i. e., medical colleges rated between 70 and 100 per cent. by the Council on Medical Education of the American Medical Association).

"3. They must present a certificate of examination by and from a state board of medical examiners recognized by the Louisiana State Board of Medical Examiners.

"4. They must furnish satisfactory proof of their identity.

"5. They must give satisfactory evidence of good moral character.

"6. They must pay a fee of $25.

"Applicants possessing a diploma from a medical college rated Class B by this board (i. e., medical colleges rated between 50 and 70 per cent. by the Council on Medical Education of the American Medical Association), in order to obtain a license to practice medicine in this state, must comply with the following conditions:

"1. They must furnish satisfactory proof of their identity.

"2. They must give satisfactory evidence of good moral character.

"3. They must present in person their diploma.

"4. They must pay the examination fee ($11).

"5. They must pass a satisfactory examination."

The Louisiana State Board of Medical Examiners recognizes at present certificates issued by the following state boards: Colorado, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, South Carolina, Texas, Utah, Vermont, Virginia, Wisconsin.

Marriages

WILBUR LUCAS, M.D., to Miss Edith Mae Johnson, both of Pueblo, Colo., October 7.

ARTHUR H. COHN, M.D., to Miss Hattye B. Saxe, both of Milwaukee, September 23.

JOHN AIMONE, M.D., Granville, Ill., to Miss Della Stringfellow of Chicago, recently.

FRANK W. VINCENT, M.D., to Miss Frances G. Knox, both of Cleveland, September 24.

GEORGE ROSENBAUM, M.D., to Miss Rebecca Relber, both of Philadelphia, September 23.

JESSE OLIVER PURVIS, M.D., to Miss Louise Sommers, both of Annapolis, Md., September 21.

MORTON G. WATSON, M.D., Louisa, Ky., to Miss Inez Wall of Huntington, Ky., September 30.

ARCHIBALD ANAND ATKINSON, M.D., Dorris, Cal., to Miss Clara I. Irwin of Aurora, Ore., recently.

EDWARD CUMMINGS, M.D., Hinton, W. Va., to Miss Marie Louise Whiting of Knoxville, Tenn., October 1.

WILLIAM ANDREW WALLACE, M.D., Spartanburg, S. C., to Miss Ada Beardsley of Manson, N. C., September 30.

Deaths

Josiah Forrest Kennedy, M.D. New York University, 1858; a member of the American Medical Association; for seven years secretary of the State Medical Society; and for several years secretary of the Polk County Medical Society; of Des Moines, Iowa; for twenty-two years secretary of the Iowa State Board of Health and of the Iowa State Board of Medical Examiners; vice-president of the Conference of State and Provincial Boards of Health of North America; editor of the *Iowa Health Bulletin;* an acknowledged authority on hygiene and sanitary science; county physician of Polk County from 1876 to 1883; professor of obstetrics in the State University of Iowa in 1869 and 1870; and United States pension examining surgeon; who went to the Pacific Coast last year on account of his health; died in Los Angeles, September 26, from abscess of the liver, aged 74.

John Alexis Tonner, M.D. University of Pennsylvania, 1866; of Brooklyn, N. Y.; appointed a medical cadet in the United States Army in 1865; and later an assistant surgeon in the U. S. Army for five years; then chief medical officer in the immigrant service; and afterward for a year in the service of Brazil; a veteran of the Spanish-American War; died from cerebral hemorrhage in Kings County Hospital, Brooklyn, N. Y., August 30.

Hugo W. Bartscher, M.D. Washington University, St. Louis, 1881; a member of the Missouri State Medical Association; one of the founders and first president of the North St. Louis Medical Society; chairman of the United Pure Food Commission of Missouri; and formerly professor of histology and bacteriology in Beaumont Hospital Medical College; died at his home in St. Louis, September 28, from cerebral hemorrhage, aged 49.

Charles Miller Swartz, M.D. University of the South, Sewanee, Tenn., 1900; Michigan College of Medicine and Surgery, Detroit, 1903; a member of the Colorado State Medical Society; and secretary of the Pueblo County Medical Society; oculist to the St. Mary's and Pueblo hospitals, the Clark Sanitarium and the McClellan Orphanage Home, Pueblo; died at his home October 3, from spinal meningitis, aged 31.

James Albert Berry, M.D. McGill University, Montreal, 1887; of Topeka, Kan.; a member of the American Medical Association; a member of the medical staff of the Stormont and Christ hospitals, Topeka; from 1893 to 1895 division surgeon for the Great Northern Railway; died suddenly on the golf links of the London, Ont., Hunt Club, September 26, from heart disease, aged 47.

Walter Thomas Clark, M.D. Harvard Medical School, 1890; of Worcester, Mass.; a member of the Massachusetts Medical Society; formerly chairman of the local board of health and city physician; associate medical examiner for Worcester County and visiting physician to Worcester City Hospital; died in the Maine General Hospital, Portland, September 23, from heart disease, aged 46.

Carl M. Sears, M.D. Baltimore Medical College, 1904; a member of the Kentucky State Medical Association; who was seriously burned by the explosion of a gasoline water heater at his home in Paducah, September 26; died September 30, while being taken in an ambulance from Riverside Hospital, Paducah, to the home of his father in Mechanicsburg, aged 26.

David Fox Hummel, M.D. Medico-Chirurgical College of Philadelphia, 1902; of Gilberton, Pa.; a member of the Medical Society of the State of Pennsylvania; for three years resident physician of the Ashland (Pa.) Miner's Hospital; died at the home of his sister in Shenandoah, September 28, five days after an operation for appendicitis, aged 35.

John Harrison Rodgers, M.D. University of Pennsylvania, 1856; a member of the Ohio State Medical Association; surgeon of the Forty-fourth and later of the One Hundred and

Fourth Ohio Volunteer Infantry, during the Civil War; for several years a member of the board of health of Springfield, Ohio; died at his home, September 28, aged 75.

Thomas Turner, M.D. University of Virginia, 1850; surgeon on the staff of General "Stonewall" Jackson; and afterward brigade surgeon in the Confederate service during the Civil War; coroner of Frederick County from 1880 to 1900, and for 20 years a justice of the peace of Frederick, Md.; died at his home in that city, September 26, aged 75.

John Hood Owings, M.D. University of Maryland, Baltimore, 1861; of Livingston, Mont.; a member of the Montana State Medical Association; for many years a practitioner of Deer Lodge, Mont.; died in St. Paul, Minn., September 26, while on his way home from Rochester, Minn., where he had undergone operation, aged 66.

Hiram E. Zimmerman, M.D. Eclectic Medical Institute, Cincinnati, 1854; of Mount Jackson, Pa.; a member of the Medical Society of the State of Pennsylvania; said to have been the oldest practitioner of Lawrence County; died in the Shenango Valley Hospital, New Castle, October 3, from kidney disease, aged 77.

Harry M. Rodgers, M.D. College of Physicians and Surgeons, Baltimore, 1884; a member of the Medical Society of Virginia; a member of the Virginia House of Delegates for six years; and a popular practitioner of Rockingham County, Va.; died at his home in Mount Crawford, October 3, from nephritis, aged 48.

Frank W. Gordon, M.D. Hahnemann Medical College, Chicago, 1866; of Sterling, Ill., and for four years health officer of that city; acting assistant surgeon, U. S. Army, during the last year of the Civil War; died in the Augustana Hospital, Chicago, October 1, a week after a surgical operation, aged 71.

John W. N. Vogt, M.D. Columbus Medical College, 1876; of Delaware, Ohio; some-time coroner of Delaware County; a member of the board of health and of the board of United States pension examining surgeons; died at the Jane M. Case Hospital, Delaware, October 4, from heart disease, aged 56.

Thomas Croswell, M.D. Bowdoin College, Brunswick, Maine, 1838; said to have been the oldest living graduate of the institution; an honorary member of the North Central Illinois Medical Association; died at the home of his daughter in Streator, Ill., October 6, aged 93.

Frank Madden, M.D. Long Island College Hospital, 1879; a member of the American Medical Association; of Plattsburg, N. Y.; a veteran of the Civil War; and a retired officer of the United States Army; died at the home of his son in New York City, October 7, aged 62.

Beverly Oliver Kinnear, M.D. University of Pennsylvania, 1870; a member of the Medical Society of the State of New York; for 11 years a member of the medical staff of Clifton Springs (N. Y.) Sanitarium; died at that institution, September 29, aged 60.

John J. Blair, M.D. California Medical College, San Francisco, 1878; of Cincinnati; died October 5 in the Cincinnati City Hospital, from the effects of cyanid of potassium, supposed to have been taken with suicidal intent, aged 61.

James Anderson, M.D. University of Michigan, 1876; New York University, 1877; a member of the American Medical Association; died suddenly at his home in Salem, Ohio, October 1, from angina pectoris, aged 57.

S. Neumann, M.D., one of the leading physicians of Berlin, Germany, died September 29, aged 89. He served as a member of the Berlin city council from 1859 to 1905, and was a prolific writer on questions involving statistics, hygiene and sociology.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

An Object Lesson.

The Clark County Medical Society gave a demonstration of postgraduate work before the Kentucky State Medical Association at its recent meeting at Winchester. The exhibition was given at the opera house in the evening before a large popular audience, and was so interesting as to elicit round after round of applause for what would ordinarily be considered a dry subject. Drs. Stephenson and Bush demonstrated the gross anatomy of the skull and brain and Dr. Clark the physiology of the brain. The demonstration was so complete and practical and brought out so much inquiry from representatives from counties where this work has not yet been taken up as to give much promise for its extension in the state.

Third Month.

FIRST WEEKLY MEETING.

I. DISEASES DUE TO PROTOZOA.

A. MALARIAL FEVERS.

MOSQUITOES IN MALARIAL FEVERS.

Genus Anopheles.—Differentiate from stegomyia and culex: colors, palpi, proboscis, resting position. Time of biting, weak fliers, hibernation, distribution in United States. Different species: *A. maculipennis, A. punctipennis, A. crucians, A. argyritarsis,* etc. Life history: Eggs, number and location, hatch in 3 or 4 days; larva, shape, structure, feeding stage 16 to 20 days; pupal stage, 3 to 10 days; effect of cold weather. Destruction of mosquitoes, abolish breeding places, gutters, barrels, pools, marshes, etc., drainage, oiling ponds, stocking ponds with fish.

THE MALARIAL PARASITES.

Historical account, work of American observers.

Classification (Schaudinn). — Order, Protozoa, sub-order, Hemosporidia; varieties, Plasmodium vivax (tertian), Plasmodium malariæ (quartan), Plasmodium immaculatum, præcox or falciparum (estivo-autumnal parasite).

I. The Parasite in Man.—(a) Plasmodium vivax (tertian fever). Form, size, shape, changes during cycle, amœboid movements, pigment, segmentation. (b) Plasmodium malariæ (quartan fever). Differs from plasmodium vivax. (c) Plasmodium falciparum (estivo-autumnal fever). Differentiate from each of others.

II. The Parasite within the Body of the Mosquito.—Gametocytes from man, flagellation and fecundation in stomach of mosquito, in muscular coat develops zygotes, which rupture freeing sporozoids, these through salivary glands into man when bitten; sporozoids develop parasites in blood of man; sexual and asexual cycles; duration of cycle, 14 days.

Contributing Etiology.—Distribution in the United States, Seasons and climate, time of day, altitude, soil, rain and moisture, race, age and sex.

CLINICAL FORMS OF MALARIAL FEVERS.

I. Regularly Intermittent Fevers.—(a) Tertian fever; prodromal symptoms, cold stage, hot stage, sweating stage. Recurrence. Double tertian infection, quotidian paroxysms. (b) Quartan fever; symptoms of each stage. Infection with two or three groups.

II. Irregular, Remittent or Continued Fevers.—(a) Estivo-autumnal fever; variations in onset, types of fever, facies, tongue, spleen, jaundice, blood examination. (b) Pernicious Malarial Fevers. (1) Comatose form; sudden onset, chill, fever, mental symptoms, recurrence of chill. (2) Algid form; gastric symptoms, prostration, pulse, temperature, diarrhea, urine, course and terminations. (3) Hemorrhagic forms, hemoglobinuric fever, black-water fever, hemoglobinuria; distribution in United States, frequency, parasites present, effect of quinin.

III. Malarial Cachexia.—Follows repeated attacks; anemia, dyspnea on exertion, edema, hemorrhages; variable temperature, enlarged spleen. Course and terminations.

REFERENCE BOOKS FOR THE THIRD MONTH.

Osler: Practice of Medicine.
Osler: Modern Medicine. Vol. I.
Braun: The Animal Parasites of Man.
Langfeld: Infectious and Parasitic Diseases.
Clarke: Protozoa and Disease.
Mott: Sleeping Sickness.

Society Proceedings

COMING MEETINGS.

Vermont State Medical Society, Rutland, Oct. 22-23.
Medical Society of Virginia, Richmond, Oct. 20-23.

KENTUCKY STATE MEDICAL ASSOCIATION.

Fifty-third Annual Session, held at Winchester, Sept. 24-25, 1908.

The President, DR. D. M. GRIFFITH, Owensboro, in the Chair.

Rev. O. C. Chandler, Winchester, offered prayer. An address of welcome was delivered by Hon. Judge J. M. Benton, which was responded to by Dr. Joseph M. Mathews, Louisville, after which the president-elect, Dr. John C. Cecil, Louisville, was installed.

Preparation of Patient for Normal Labor.

DR. S. L. BEARD, Shelbyville: The physician so seldom has the opportunity to see the patient before labor begins that it is difficult to say how to prepare her. Diseases of pregnancy should receive attention, and among them albuminuria, the explanation for which is that the blood vessels supplying the kidneys are subjected to pressure from the gravid uterus, causing a congestion of the venous circulation of the kidney. This is the cause of the frequency of albuminuria. The woman soon to be confined should have proper diet, which should be nutritious, avoiding pastries and sweets. Exercise should be moderate. She should have plenty of fresh air in the sleeping room. The dress should be loose-fitting, so as not to interfere with the progress of the labor. The obstetrician must have such articles as he may require to complete the labor. There are certain antiseptic precautions which should be practiced in modern obstetrics, and first and foremost the medical attendant should be clean, both as to clothing and hands. I never give a vaginal douche before labor begins, for I think that it will remove the natural secretions which, if left alone, will serve to lubricate the soft parts, facilitating the passage of the head through the outlet.

Puerperal Eclampsia.

DR. J. M. PECK, Arlington: For want of a better theory I would accept the one that puerperal convulsions are the result of a toxemia which depends for its origin on the placenta, and most probably from the outermost fetal layer of the placenta. Zweifel claims that lactic aciduria is either responsible for or associated with this condition. In every case of pregnancy in which the blood or urinary test reveals the presence of lactic acid and convulsions supervene I advise emptying the uterus at once. Prophylaxis offers better results to the mother and vastly better to the offspring than anything one might be able to do after the onset of the convulsions. Chloroform is a very potent remedy for immediate or temporary relief. Morphin is a powerful agent used hypodermically for quick relief, but its use is open to the serious objection of its tendency to check all the eliminative processes of the body, when at this time there is special need that these processes be stimulated. Veratrum viride has many warm advocates, and is in many instances a valuable remedy. Chloral is a remedy whose utility must not be overlooked. Venesection will afford temporary relief from convulsions. Although some able men oppose it as a useless and unscientific treatment, yet it has a host of ardent supporters, and to me its use appears entirely logical.

Management of Occipito-Posterior Position.

DR. H. B. RITTER, Louisville: If the posterior position is recognized before the beginning of labor, the postural treatment is aided by external manipulation for its correction. This may be effective and convert the posterior into a normal anterior position at the very outset. If the position is occipito-posterior when the labor begins, the object should be to maintain or restore flexion while the head molds, so that the biparietal diameter, which is resisted by the promontory of the sacrum at one end and by the pectineal eminence at the other end, may enter the superior strait. The forceps in delay at the superior strait is not recommended, on account of the danger and difficulty attending this operation. At times, one is forced to use forceps here when other operations are contraindicated. The postural treatment to be effective must be resorted to while the factors in rotation are active, and before they have been exhausted by prolonged labor.

Cesarean Section.

DR. A. H. BARKLEY, Lexington: This operation is demanded in any case in which there is such disproportion between the parturient canal and child or vice versa or when there exists an obstruction due to a growth, either malignant or benign, either of the mother or child, that delivery per vias naturales is impossible. There are three conditions, any one of which carries with it the possibility of the performance of Cesarean section. They are contracted pelvis, eclampsia and placenta prævia. In eclampsia the mortality still remains high, and when one turns to the statistics of cases treated by Cesarean section I am all the more impressed that there still remains room for improvement. On close analysis of these statistics it is found that in only the very worst cases have the patients been subjected to this operation, and under these conditions the fetal mortality has been somewhat reduced and that of the mother raised. The mortality of placenta prævia when treated by version or Cesarean section up to a few years ago was about the same, but as so much has been written since that time about the low mortality accompanying early operation it has been reduced materially. There will always be a certain class of cases in which craniotomy will be indicated, but, aside from this class, which is constantly growing smaller, Cesarean section should be the operation of choice. Symphyseotomy is an operation that is about obsolete and is now seldom performed.

Discussion of Symposium on Obstetrics.

DR. EDWARD SPYDELL: In spite of the multiplicity of remedies mentioned, there are practically but two remedies in treatment of eclampsia—venesection and veratrum viride. The advocates of venesection claim that by removing a definite amount of blood from the patient's body we remove a definite amount of poison. The circulating medium is at once restored to its former measure by the introduction of normal salt solution. Delivery can be effected and elimination can be pursued in the next two days, and there is no danger of the return of the convulsions. I had the fortune or misfortune to have a case of eclampsia only two weeks ago, and in that case veratrum viride was tried, and both the mother and child are alive. In cases of rigid cervix I would prefer vaginal Cesarean section, and I believe consent to it can be more readily obtained from the family than permission to do an abdominal Cesarean section.

DR. FRANK LAPSLEY, Paris: I advocate in every case the use of ergot after labor, and not before the expulsion of the secundines. I have seen but one case of postpartum convulsions, and I have always felt that those cases were more serious than antepartum convulsions. I doubt very much the wisdom of using the tampon when the os is not thoroughly dilated in a case of antepartum hemorrhage. In such cases the sooner one can empty the uterus the better.

DR. J. G. CARPENTER, Stanford: The patient should be under the watchful care of a competent physician from the inception of pregnancy until labor is concluded, the puerperal state passed, and the woman restored to a physiologic condition. I have used blood-letting frequently, with the best results. The postpartum convulsions have continued for three weeks or more, due to the condition of the blood and the nephritis present, which was due to the mechanical obstruction and pressure. Cesarean section should always be an operation of election.

DR. C. Z. AUD, Cevilian: It is the duty of every practitioner to obtain the best trained nurses possible. I try to teach women who are going to attend to my obstetric cases to wash the women and babies, but first to pay attention to their own hands. Sepsis must find a means to enter the economy, and in abscess of the breast the infection has often found its point of entrance through the nipple. The nipples should be cleansed immediately after the child nurses, and anointed before being allowed to dry, because the moment the

nipple dries it may crack, as some cuticles do. After the birth of the child I practice systematic massage of the uterus, so as to expel everything that the uterus contains.

DR. L. H. SOUTH, Bowling Green: Venesection is worse than useless in the treatment of eclampsia if we do not empty the uterus, because toxins are still being manufactured. As to the use of veratrum viride, no physician who is called to see a case of carbolic acid poisoning would expect to relieve it by keeping the poison in the capillaries; neither would he expect to relieve eclampsia. One has to treat the original source, and that is in the placenta. This is shown by recent investigation; consequently the most rational treatment of eclampsia is first prevention and then elimination. Forceps should never be considered when Cesarean section is indicated. One should never use ergot unless there is therapeutic indication for it. It is one of the most useless drugs, yet one of the most dangerous when given for a long time.

DR. WILLIAM H. WATHEN, Louisville: Craniotomy on the living child should not be tolerated, and I have advocated this since my entrance into professional life. Spiritually, the child is on the same plane as the mother, and I claim that no one has a right to kill the child when other means can be resorted to to save it, as well as the life of the mother. Cesarean section is not difficult, and can be performed successfully in nearly every case if done in time, thereby saving the life of the child and the life of the mother.

DR. I. A. SHIRLEY, Winchester: Craniotomy should never be done on the living child. Physicians are not competent to do a Cesarean section unless they are surrounded by the proper conditions and circumstances. The country doctor is compelled to deliver a woman sometimes by craniotomy, or let both the child and the mother die, and I purpose to do craniotomy as best I can and save the mother rather than to let both the mother and the child die.

DR. W. W. ANDERSON, Newport: In nine cases out of ten when delivery has been accomplished completely there is no therapeutic indication for the use of ergot.

DR. D. O. HANCOCK, Henderson: I regard puerperal eclampsia as one of the terminal affections of a faulty metabolism and a lack of function on the part of the liver. Other terminal affections are nephritis, peritonitis, pericarditis, edema of the brain, and general inflammations affecting the kidney. The liver is the organ of elimination and is the standardizer of the blood in eliminating toxic products from the system. If the eclampsia is caused by extension of the poison to the brain, and there is a cerebral edema, with the intense headache, that usually anticipates puerperal convulsions, then the treatment would perhaps be spinal puncture. The treatment of puerperal eclampsia, however, is the treatment of this condition in the system, and the treatment with chloral and veratrum viride, etc., are treatments of symptoms.

DR. ALEXANDER SKAGGS, Morehead: Is it thought advisable to render every woman sterile when Cesarean section has been necessitated?

DR. J. R. MORRISON, Louisville: What we have accomplished lately in obstetrics has been more along the line of prevention and hygiene. In this way we are doing a great deal of good. If every practitioner understands his patient, if he will keep up the elimination and the well-being of the patient, and not allow her to lapse into a state of toxemia, he will have accomplished a great amount of good. Rest in a pregnant woman is as important as anything else. If urea is present in too large a quantity, it shows that the kidney is being overworked. An examination for indican is important. In a number of samples of urine which I have examined from women who have had puerperal eclampsia, I have found that a large amount of indican has been present. If we have taken the proper care of our patient, we will know whether Cesarean section is necessary or probable, and if one is likely to be compelled to do the operation I see no excuse in letting the patient go until the third day.

DR. J. M. PECK: In regard to the objection raised by Dr. South to venesection, unless we empty the uterus and remove the placenta, we take it for granted that we are not going to stop as soon as we have bled the patient, but are going to cep up the process of elimination. Recently I had a patient who was attacked with puerperal convulsions at the eighth month, and she had either five or six of them. I bled her early, instituted eliminative treatment, carried her to term, and delivered her of a healthy child. The mother and child both did well. Prophylaxis offers better results to the child and mother than anything else we can do. It is our duty, and we are remiss in it if we do not educate the people to report pregnancy to the physician they expect to attend them as soon as it has taken place.

DR. A. H. BARKLEY: I wish to emphasize the importance of an early operation. The mortality is practically nil, and the outcome depends on recognizing the condition. Not all cases, however, lead to Cesarean section. I would not do craniotomy because Cesarean section is a safe operation with the living child, and with a dead child it is still safer.

(To be continued.)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Twenty-first Annual Meeting, held at Baltimore, Sept. 22-24, 1908.

(Continued from page 1175.)

Hysteria as a Surgeon Sees It.

DR. AP MORGAN VANCE, Louisville, related a number of interesting clinical instances of hysteria simulating grave organic lesions:

Many methods of cure owe their value to the power of suggestion and an attitude of command as the controlling elements in vanquishing the obsession of the victims. Alertness is necessary to avoid mistakes in diagnosis, and I attribute my success in diagnosis and treatment of some of these cases to that alertness which is bred of the rivalry in diagnosis which came within my experience early in my medical career.

DISCUSSION.

DR. HERMAN E. HAYD, Buffalo: I desire to emphasize the difficulty attending a correct diagnosis in cases of hysteria. Everyone has seen patients who have been sadly neglected, and who have been treated for all kinds of hysterical symptoms, when there was really not only one but various pathologic conditions at the bottom of the trouble, making the case extremely complex. The reason, therefore, why so many of these neurasthenic, hysteric and neurotic women are not cured is not because they have not received good surgery, but because they have not had enough good surgery.

DR. CHARLES G. CUMSTON, Boston: I have found that the quickest way to make hysterical patients who think they have hip joint disease walk is to mention in their presence that high amputation is the proper thing. In one case the patient was able to walk in a short time after this suggestion. A woman was supposed to have had hip joint disease, this diagnosis having been made by an orthopedic surgeon, but pelvic examination disclosed hydrosalpinx, and on its removal the hip-joint symptoms disappeared.

DR. JOHN A. LYONS, Chicago: I do not agree with Dr. Hayd that there is always marked pathology in these hysteric patients, and support the views advanced by the author of the paper. In many instances the hysteria can be relieved by suggestion.

DR. ROLAND E. SKEEL, Cleveland: The welfare of the medical profession and of patients depends on recognizing the fact that while there may be a minor pathologic condition, it is only recognized by the patient by reason of over-excitable and over-sensitive nerves, and is overlooked by the physician. These minor pathologic conditions can be found if they are sought for, but inasmuch as there is no perfect human body, even if the condition be removed it would only cure a limited number of patients.

Comparative Merits of Abdominal Celiotomy and Colpotomy for Intrapelvic Abscess.

DR. W. S. SMITH, Baltimore: If one considers the improvements that have been made in surgical technic, together with

the striking results obtained in pus cases by the Fowler postural treatment and the Murphy irrigation, the mortality plea loses much of its significance and force. My recent experience in this connection has been instructive and satisfactory. In the last 110 laparotomies which I have done, there has been no mortality. Of this number, 53 were performed for intrapelvic pus. Drainage was indicated and used in 10 instances, and the Fowler-Murphy treatment was resorted to in 2. During the same period of time there has been but 10 colpotomies, and 2 of these were followed by the abdominal operation.

DISCUSSION.

DR. CHARLES L. BONIFIELD, Cincinnati: Vaginal incision is of great importance in selected cases, and the earlier one can get at pus behind the uterus and drain it, the less damage will be done to the uterine appendages, and the more hope there is of curing these patients without a radical operation. Under the most favorable circumstances it is the exception rather than the rule that these patients are cured by this simple procedure. To deal with these cases by the vaginal route if the temperature has become normal, and the patient is in a condition to withstand radical operation, is to attack the disease in an awkward and inefficient way. The mortality from operations for pus in the pelvis depends very greatly on when the operation is done. One should avoid abdominal section for the removal of suppurating appendages while the patient has elevation of temperature. I have almost completely given up conservative surgery in cases of inflammatory disease of the appendages. Conservative surgery as regards the tubes is more frequently successful than that with regard to the ovaries. In cases in which I have left part of an ovary, the patients have usually returned for a subsequent operation.

DR. ALBERT GOLDSPOHN, Chicago: Vaginal drainage is permissible in acute pelvic conditions, and the cases amenable to this operation are those in which the focus of pus is localized in the pelvic cellular tissue. When the primary focus of inflammation is not intraperitoneal or intratubal, but is in the pelvic cellular tissue, great relief is afforded or even a cure sometimes effected by vaginal incision and drainage. Intraperitoneal suppurative conditions are not usually much benefited by vaginal incision and drainage, but more radical measures are needed.

DR. C. C. FREDERICK, Buffalo: In pelvic abscess I prefer the vaginal route for drainage, and then, if necessary, a more radical operation can be done at a later time.

DR. FREDERICK BLUME, Pittsburg: I have resorted to vaginal incision and drainage in the class of cases under discussion, and later, if the patients return, I perform an abdominal operation. When the uterus is veritably riddled with small abscesses, even though one removes the uterus, the patient is usually so generally infected that operation is likely to be followed by an unfavorable result.

DR. JOSEPH A. HALL, Cincinnati: Many pelvic abscesses are the result of tuberculosis, and many are caused by the gonococcus. Vaginal incision and drainage accomplishes much good in some cases, but in others more radical procedures are indicated.

DR. LOUIS FRANK, Louisville: There can be no question as to the advisabilityof vaginal incision and drainage in acute pus collections as a temporary expedient. My experience, however, is that in some cases in which it is done abdominal section is required later. In one case which I recall there was a pus collection between the bladder and uterus in which the fever continued unduly high after vaginal colpotomy. Cases of infection of the tubes and broad ligament which do not subside after opening the abscesses would yield only to extirpation of the tube and the removal of the broad ligament.

DR. JOS. P. BRAXHAM, Baltimore: In some cases the degree of virulence is slight, while in others it is great, and on account of this difference the treatment should vary in different cases.

DR. W. S. SMITH: I have not been convinced of the importance of removing a healthy tube, even though the infection is of gonorrheal origin. I think that a thorough curettement of the uterus and careful exsection of the diseased tube will result in a permanent cure, and that there is seldom any necessity for taking out a healthy tube even in gonorrhea.

To Prevent Leaving a Sponge in the Abdomen.

DR. H. S. CROSSEN, St. Louis: Security against this fatal accident is counted one of the unsolved problems of abdominal surgery. Practically all authorities state that there is no guarantee against its occurrence, even in routine hospital work, and with all the rules of cooperation and the cumbersome apparatus devised to prevent it. The failure of the preventive methods in general use is due to their dependence on sustained attention concerning the sponges, which attention can not be given by the operator, it being required elsewhere. A method to be effective under all circumstances must be practically automatic, must be applicable in emergency work in the country as well as in hospital work, and should be fairly convenient. The method I have used during the past two years insures the removal of all gauze without particular attention on the part of anyone. It consists in the elimination of all detached pads and sponges and the utilization of ten-yard gauze strips, each strip packed in a convenient bag in such a way that it may be drawn out a little at a time, as needed.

Mobility of the Patient After Laparotomy.

DR. WALTER B. CHASE, Brooklyn, N. Y.: The early dictum of the rigid immobility of the patient after laparotomy is wrong in principle and injurious in practice. Limited mobility of the patient, active or passive, within rational limitations, is admissible and desirable whenever the comfort and advantage of the patient are thereby promoted. The cardinal prerequisites to prompt healing of wounds are perfect coaptation, perfect rest, and freedom from infection. The sitting up of the patient in bed or out of bed the day after the operation, being around the ward the following day, and leaving the hospital for ordinary exercise at the end of a week, is not compatible with sound surgical principles, even though in individual instances satisfactory recovery has followed. By ignoring the pathologic conditions present, the burden of proof, that the phlebitis is not due to infection, or that the mischief attending thrombosis and embolism is not a result of too early mobility of the patient, rests with the advocates of the new departure.

DISCUSSION.

DR. ALBERT GOLDSPOHN, Chicago: It is wrong to encourage patients to get up on the second or third day after laparotomy, as it is necessary to wait until cicatrization is fairly complete, and this does not occur in less than about ten days.

DR. DANIEL H. CRAIG, Boston: The mobility of a patient after operation has a relationship to the postoperative complications of phlebitis and thrombosis, and I believe that early mobility of patients lessens the liability to these complications.

Extrauterine Pregnancy.

DR. HERMAN E. HAYD, Buffalo, N. Y.: I shall classify the cases I report according to their clinical manifestations: First, the tragic or cataclysmic class, in which there is free hemorrhage going on into the peritoneal cavity, with no tendency to localization. Here an immediate abdominal operation is recommended. Second, the cases in which a small rupture has taken place and in which hematocele more or less circumscribed develops. In this class I advise vaginal incision and drainage if the pregnancy is not advanced beyond six weeks, or if the blood clot has not become too firmly organized. Third, those patients who have gone on to the second, and to the fourth or fifth month, when rupture takes place, but the fetal product continues to grow on account of the new attachment it makes. Fourth, those patients who have gone on to the development of a pelvic abscess with broken-down fetal products in the mass. Fifth, those cases in which the patients have gone on to term and have been delivered by operation when the child is viable, or in which the child has died and undergone mummification or calcification as a lithopedion.

Advanced Ectopic Gestation, with Living Child, with Report of Three Cases.

DR. X. O. WERDER, Pittsburg: All these cases began as tubal pregnancy. The time of rupture can be estimated fr-

the history of every case. In the first case it occurred at about the end of the second month; in the second it apparently occurred unusually late, about the middle of the fourth month, and in the third case severe cramps about six weeks after the last menstrual period indicated that rupture took place at that time, although the complication with normal pregnancy and a subsequent abortion caused the symptoms to be rather mixed and consequently less definite than in the previous cases. In none of the cases was the diagnosis attended with great difficulty. In the advanced form of extrauterine pregnancy the only other condition with which it may be confounded is normal uterine pregnancy. Mistakes in diagnosis are less likely to occur than in the earlier forms of ectopic gestation, although even the latter cases are not usually difficult to recognize.

Having in the prophylactic instrumental compression of the abdominal aorta a safe and reliable means of preventing the so much dreaded placental hemorrhage, which has really been the principal stumbling-block in the surgical treatment of advanced ectopic gestation, there seems to be no longer any just ground for other than radical operation in this condition, consisting in the complete extirpation of the gestation sac with living placenta, an operation which in my opinion is the only proper and correct surgical procedure for these cases.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-eighth Annual Session, held at Cambridge Springs, Sept. 15-17, 1908.

The President, DR. WILLIAM L. ESTES, South Bethlehem, in the Chair.

(Continued from page 1271.)

Acute Mastoiditis.

DR. S. MCCUEN SMITH, Philadelphia: I desire to emphasize the importance of mastoid involvement and to urge the adoption of prompt surgical measures. In the majority of cases the tympanic cavity is the site of the initial lesion, and early recognition and prompt treatment of the primary middle-ear inflammation will prevent many cases of mastoid involvement. Prophylaxis is of the first importance, and the most urgent prophylactic measure in acute tympanic disease, especially when complicating the infectious diseases, is early and free incision of the membrana tympani.

DISCUSSION.

DR. ROBERT MILLIGAN, Pittsburg: Especially in children, one should not wait for the classical symptoms to develop before operating, as by so doing one would lose the majority of the cases. In children, one symptom that is practically always present is the bulging of the exterior auditory canal. Indeed, when complicated by pneumonia, measles, etc., this is often the only symptom present.

DR. T. J. ELTERICH, Pittsburg: Middle-ear disease is a frequent complication of almost any disease of infancy or childhood. I have found about 75 per cent. of still-born infants with pus in the middle ear.

DR. S. MCCUEN SMITH plead for more routine examination of the ear in cases in which the diagnosis is not definite.

Intracranial Complications of Otitic Origin.

DR. EWING W. DAY, Pittsburg, having met with a slight accident, his paper was read by Dr. George C. Johnston, Pittsburg.

The subject is divided into meningitis, brain abscess and sinus thrombosis. Each of these, if caused by either of the other two, has characteristics that therapeutically are well defined. The prognosis in meningitis is unfavorable.

DISCUSSION.

DR. THEODORE DILLER, Pittsburg: It is a great waste of time to attempt to make a differential diagnosis among these three conditions; because, for the relief of any of them, a prompt operation is called for. As an additional aid to diagnosis, the etiology is a feature of importance; pus coming from the ear means at least the possibility of meningitis or abscess.

DR. ALFRED GORDON, Philadelphia: The relation between otology and neurology is being recognized as intimate. There are cases representing during life symptoms of cerebellar abscess in which nothing is found at autopsy.

Diseases of the Ear from a Medical Standpoint.

DR. WILLIAM H. CAMERON, Pittsburg: There is particular necessity for operating in otitis media and mastoiditis, especially where children are concerned. Routine examinations are important and cases should be tabulated, in order to ascertain the percentage of ear complications.

DISCUSSION.

DR. S. MCCUEN SMITH, Philadelphia: Many ear specialists have been trying for a number of years to impart to the general profession a proper conception of the importance of these ear diseases.

DR. G. R. S. CORSON, Pottsville: Dr. Smith has struck the keynote in the remark just quoted; otologists can not reach the minds of many general practitioners because they do not attend the county or state society meetings, and I doubt whether they read the medical journals.

Epithelioma of the Lower Lid, with Successful Transplantation from the Arm.

DR. GEORGE B. JOHNSON, JR., Franklin, gave the history of the case, which is briefly as follows:

The patient, aged 66, had an epitheliomatous ulcer, the size of a pea, on the margin of the lower right lid. It had been curetted and cauterized twice, with no improvement. He was treated with the electric cautery, with the same result. The ulcer was excised and the wound closed by a plastic operation. The wound apparently healed, but the ulcer returned in a month. I removed the entire lower lid and grafted a piece of the arm. The result has been perfect up to the present time.

DISCUSSION.

DR. EDWARD STIEREN, Pittsburg: Better results are usually obtained from skingrafting than from the pedicle transplantation operation, but the former is open to the objection that the line of union is usually well defined, the graft being of a different color from the surrounding skin. In my experience, when union by first intention is expected, I found the use of vaselin defeats the object, a dry dressing being preferable.

DR. WILLIAM CAMPBELL POSEY, Philadelphia: One should try to get along without operation, if possible, in such cases; in one case absolute healing was obtained by the use of potassium chlorate. I prefer the pedicle-flap operation to skingrafting; a ciliary border obtained by a pedicle-flap operation rapidly takes on an epithelial character. I prefer an oleaginous dressing, covering the parts with bichlorid solution and have seen only the happiest results follow this method of treatment.

DR. E. B. HECKEL, Pittsburg: The operation of grafting should not be hurried; time should be taken to control the hemorrhage absolutely. In my opinion, vaseline should be used in all but the first dressing, as it prevents drying and the tendency to wrinkling of the skin.

DR. JOHNSON: The principal objection to pedicle flaps has been the shrinking. By Bediner's modification of the Denonviller operation this shrinkage has been overcome.

An Ophthalmological Phase of the Dangers of Consanguineous Marriages.

DRS. WILLIAM CAMPBELL POSEY and ALBERT C. SAUTTER, Philadelphia: There are positive ophthalmologic evidence of the dangers of consanguineous marriages. Deafmutism, insanity, idiocy, epilepsy and retinitis pigmentosa, generally attributed to consanguinity, are strongly hereditary. Danger does not cease with the creation of these diseases. Marriages between relations and to the subjects of retinitis pigmentosa should be prohibited. It is desirable that the profession should be of one mind in the position that it assumes in regard to the matter of consangineous marriages

DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia: I believe that consanguineous marriages are productive of eye afflictions, but also of insanity, idiocy, and certain varieties of these. My experience, however, is rather in favor of the old view that the tendency to disease depends on an imperfect strain in the forebears of those who marry. On the whole, I think it best that cousins should not marry each other. Statistics of institutions show that few of those suffering from idiocy have been the children of marriages of consanguinity.

DR. WENDELL REBER, Philadelphia: Men engaged in ophthalmologic work are more likely than other practitioners, except alienists, to meet with this problem. Laws would accomplish little, as people will cover up such things in the family history. Retinitis pigmentosa might be an instance of reversion to the lower type, since a similar condition exists in animals.

DR. M. V. BALL, Warren: The same reasons that would prevent marriages between cousins would render marriages among their descendants unwise. I have recently seen three or four cases of retinitis pigmentosa in which I could trace no inheritance at all.

DR. EDWARD STIEREN, Pittsburg, asked whether there is a law in Pennsylvania prohibiting the marriage of first cousins.

DR. W. C. POSEY: I made an investigation and found that modern medical students have received practically no teaching on the subject of consanguineous marriages. The textbooks on neurology should contain information on this point.

DR. E. B. HECKEL, Pittsburg: The Pennsylvania Legislature prohibited marriages between cousins four years ago.

Trachoma and the Public Weal.

DR. CLARENCE E. FRANKLIN, Philadelphia, wrote this paper, which, in his absence, was read by Dr. Lewis H. Taylor of Wilkes-Barre. Trachoma is a disease with no present cure, the result being invariable damage to the eye. It is generally unrecognized in medical clinics. Usually found in foreign-born patients, trachoma is of vast importance in its relation to health and the ability to earn a livelihood. In view of the vigorous exclusion of these cases from the United States at quarantine, it is the duty of the medical man to aid in the detection of trachoma within our borders.

DISCUSSION.

DR. W. C. POSEY, Philadelphia: While our government is doing all it can to keep this disease out of the United States, the medical profession is not doing all it can to cure this disease within our commonwealth.

DR. LEWIS H. TAYLOR, Wilkes-Barre: It would be well to have a committee appointed to search out such diseases, but every practitioner is not able to diagnose a case of trachoma. The state took the matter up some years ago.

DR. E. B. HECKEL, Pittsburg, described the manner in which such cases are investigated and treated in Pittsburg.

DR. WENDELL REBER, Philadelphia: I consider that though there are fewer cases of trachoma now than fifteen years ago, they should be isolated.

DR. EDWARD STIEREN, Pittsburg: Merely reporting cases would not prevent the spread of the disease, and no measures are taken to prevent others from acquiring it. The plan of having children afflicted with trachoma placed in isolation hospitals and kept for one or more years is ideal.

Beginning Signs of Retinal Angiosclerosis.

DR. WENDELL REBER, Philadelphia: Diseases in the retinal vessels are not often recognized in their early stages. Ophthalmic combined with general therapy is important and there is need of the most thorough going general clinical work in this connection. Beginning angiosclerosis may be related to various dyscrasias, and I advise the use of pilocarpin in treatment of such cases.

Gross Obstructive Diseases in the Retinal Vessels.

DR. CLARENCE M. HARRIS, Johnstown, described the ophthalmoscopic appearances and the visual fields, and quoted the pathologic findings in certain cases, emphasizing prophylaxis as being more important than the usually ineffective after-treatment. The histories of the six cases were given.

Discussion on Retinal Diseases.

DR. E. B. HECKEL, Pittsburg: Calomel usually relieves so-called "blind headaches," and I therefore think them due to a species of autointoxication. I tried nitrite of amyl in one case, with good temporary effect.

DR. W. REBER, Philadelphia: It is significant that of the three great end organs that contain end arteries, the eye is the only one that affords an opportunity of studying the circulation at first hand. More attention should be paid to the stage of "cork-screw artery"—the early stage, usually overlooked, in which so much can be done for the patient.

DR. C. M. HARRIS, Johnstown: I have often observed the tortuosity of the vessels. As a rule, I have found the circulation to be sluggish.

DR. E. B. HECKEL, Pittsburg: A small pupil is a sign of general arteriosclerosis.

Society Ownership of Papers Presented Before It.

DR. OSCAR H. ALLIS, Philadelphia, related that, on request, he sent to each of two medical journals a manuscript copy of his paper to be read before the American Surgical Association. He notified neither one that it was not to have exclusive publication rights. On learning these facts later, the publishers of one of the journals referred to wrote to Dr. Allis that they had accepted the paper in accordance with their invariable rule, printed in every issue—the rule common among medical journals—namely, that articles are accepted for publication as original only when offered to that journal exclusively. This firm, therefore, presented a bill for the expense of typesetting, etc., to which it had unnecessarily been put. The author deplored the alleged commercialism of some publishing houses. The medical society itself is the sole proprietor of all papers read at its session. The few medical journals which uphold noble standards are known to the medical society, and to each of these full proceedings should be sent. Dr. Allis feels that there could be no greater test of the excellence of a contribution than would be shown by its simultaneous appearance in all the high grade medical journals, and no sterner rebuke to the low and mercenary character of many of our American medical journals, than the refusal of a county, state or national society to permit them to publish any part of its proceedings. No part of the proceedings of a medical society should appear in any medical journal other than its own unless accompanied with the words "published by permission" of the society before which it was read.

(*To be continued.*)

INTERNATIONAL CONFERENCE ON TUBERCULOSIS.

Seventh Annual Session, held at Philadelphia, Sept. 23-26, 1908.

(*Concluded from page 1269.*)

Tuberculosis and Legal Rights.

DR. SAMUEL G. DIXON, Philadelphia: While the power of the state is ample to enact health regulations, the enforcement of these regulations is extremely difficult. It should always be possible to enforce health regulations in a summary manner, though, at the same time, they should be as little vexatious as possible. Regulations to prevent the spread of tuberculosis will be more difficult to enforce than those relating to other infectious diseases. The legal rights of the people are comprised in the word "protection"; and this means protection of life, health and property. While life and health should take the first place, this is too often given to property. There are a hundred laws for the protection of property to one for the protection of life and health. The legal rights of the people are: First, to know where the organisms exist which are responsible for the spread of disease. Second, to know when, where and by whom, their dead, of whatever disease, are buried. Third, to require transportation companies to refrain from carrying the body of a person dead of tuberculosis without an authoritative permit. Fourth, all persons moving

should require from the owners of their new residence a clean bill of health. Fifth, they should demand that all public laundries sterilize clothing. Sixth, all public buildings should be supplied with cuspidors containing disinfectants. Seventh, all washable clothing in sleeping cars and public places should be disinfected. Eighth, the people have a right to demand pure food. Ninth, all sufferers from consumption should protect their fellow citizens. Tenth, tuberculous children should be excluded from schools. Eleventh, the people have a right to require that clothing offered them for sale should be free from all contagion. Twelfth, the people have a right to demand stricter limitation on the sale of alcoholic beverages. Thirteenth, public utilities as telephones, drinking cups, pencils, penholders, cuspidors, should be cleaned and disinfected daily. In conclusion two points of attack are open, neither of which must be neglected: First, the destruction of the tubercle bacillus itself; second, the building up of the resisting powers of the individual by the supply of proper and legally inspected food.

Antituberculosis Education.

DR. LIVINGSTON FARRAND, New York: The responsibility for the protection of communities against tuberculosis must center in the local authorities. Antituberculosis sanatoria are increasing in the United States, 123 having been opened in the last twelve months. We should approach the question of tuberculosis by two avenues: Education of the general public and enactment of efficient legislation. To accomplish either of these ends organization is necessary, whether it be rejuvenation of an established society or the formation of a new one would depend largely on the conditions as they exist in a given community.

Compulsory Study of Hygiene by Teachers.

DR. G. A. HERON, London: The study of elementary hygiene by teachers and by children in the higher school grades should be made compulsory. Some one should be appointed to interest the governments of the various countries represented at the conference in this object.

Antituberculosis Education in the Schools.

DR. L. CALMETTE, Lille, France: In order to obtain decisive results, it is necessary to demand the introduction of antituberculosis education in the schools of all grades, in the army and navy, in the trades unions and other societies of workmen, sick-fund associations and professional groups of every kind, in the families, in towns and country, by means of lectures, profuse notices and public kinematographic projections, and, finally, throughout the nation by means of laws, making notification of cases of tuberculosis compulsory, both for the heads of the families and physicians, by the obligation of periodical disinfection during the course of the disease and after death, by the interdiction to send consumptive soldiers back to their homes, without previous education and notification and by the control of immigration.

Antituberculosis Education.

An abstract of this paper by Dr. Martin Kirchner, Berlin, was read by Dr. Pannwitz.

The conviction that tuberculosis is a contagious disease must be propagated among the people by every possible means. It is of the greatest importance to demonstrate that the contagion can be brought on not only by close contact with a tuberculous person, but also by the wearing of infected clothes; by the use of articles of a tuberculous patient by a healthy person, and by the occupation of rooms formerly inhabited by a tuberculous individual. Attention must be called to the fact that the resisting force of the body against tuberculosis contagion is increased by cleanliness of the body and of living rooms, by good nutrition, baths and physical exercise. Antituberculosis instruction should be given to all those who are going to be professional teachers, and must, therefore, be given in all preparatory and other establishments for the training of teachers for elementary schools, as well as of those for higher schools and universities. Attention must be paid in all schools and teaching institutions to physical exercises, gymnastics, swimming and games.

Discussion on Antituberculosis Education.

DR. D. L. DETRE, Budapest: In 1907, the government of Hungary gave a free course of lectures on tuberculosis to the school teachers and has since distributed many thousand pamphlets on preventive methods.

DR. THEODORE ALTSCHUL, Prague: The compulsory study of hygiene has been introduced in the gymnasia and high schools of Austria and Bohemia.

New Methods of Early Diagnosis of Tuberculosis.

DR. A. CALMETTE, of Lille, France: Clinicians and investigators should direct their efforts toward increasing the number and effectiveness of the means of information about the disease. Persons with latent inherited lesions are extremely liable to subsequent reinfection, but successive reinfections apparently increase the resistance of tuberculosis subjects, because the disease progresses more slowly. Every reinfection, however, diminishes the resisting power of the organism according to the intensity of the attack. The presence of Koch's bacillus can not be regarded as an early sign of tuberculosis; therefore, clinical means of examinations should be cultivated and perfected. Among the clinical signs which should be sought for are: instability of temperature, symmetry of the respiratory movement, pretuberculous albuminuria of Teissier, the albuminosuria of Ott, blister test of Roge and Josue, Robin and Binet's test of measuring the gaseous interchanges, Ehrlich's diazo reaction, pneumography after Hirtz and Brouardel, and radioscopy and radiography. The agglutination test of Arloing and Courmont must also be considered, but tuberculin is the most reliable, particularly the skin method instituted by von Pirquet, of Vienna, and the ocular tuberculin reaction instituted by Wolff-Eissner and myself in May and June, 1907. The latter is positive in at least 93 per cent. of all cases diagnosed clinicallly and it will show that 10 to 15 per cent. of all persons supposed to be perfectly healthy have tuberculous lesions.

Reports on the Progress of the Antituberculosis Movement in the Various Countries.

In response to the call of the chairman, reports were read by Dr. L. Hamel, for Germany; Dr. Livingston Farrand, for the United States; Dr. Herman von Schrotter, for Austria; Dr. J. F. Heymans, for Belgium; Dr. H. Roerdam, for Denmark; Dr. Landouzy, for France; Dr. C. Theodore Williams, for Great Britain; Dr. A. Detre, for Hungary; Dr. F. D. Harbitz, for Norway; Dr. de Josselin, de Jong, for Holland; Dr. Trimescu, for Roumania; Dr. Waldimiroff, for Russia; Dr. Olerantz, for Sweden, and Dr. Fritz Eger, for Switzerland.

Dr. Farrand's report showed a general increase of interest in the crusade against the disease. All over the world it was shown that legislative bodies are appropriating large funds for the erection of free consumptive hospitals and for improved sanitary conditions among the poor. Legislative bodies have adopted measures for instructing children in schools and lower class adults in the prevention of the disease. Every delegate who presented a report was satisfied that the ravages of tuberculosis were being greatly checked and all expressed great hope for the future. Dr. Farrand said that 3,695 new beds had been established in hospitals and sanatoria of the United States for consumptive patients since the first of the year. In the United States there were 196 special organizations for the prevention of tuberculosis, and all over the country compulsory registration laws were now in practical effect. According to a law recently passed in Massachusetts, children in schools must be taught how to avoid the disease.

Dr. Williams said that the death rate was extremely high in Ireland, 12,000 patients having died last year. He attributed the large percentage of younger victims to the fact that the schools were insanitary and that the children were not properly nourished.

Awards of Medals.

At the closing session, the awards of prizes for meritorious work in the study of means for the prevention of tuberculosis were made. Two gold and four silver medals are given every three years. The recipients of the gold ones this year were Dr. Frederich Althoff, Berlin, and Mr. Henry Phipps, New

York, founder of the Henry Phipps Institute in Philadelphia.

Dr. Bernhard Fraenkel, Berlin; Dr. C. Theodore Williams, London; Dr. Louis Landouzy, Paris, and Dr. Emilio R. Coni, Buenos Ayres, received the silver medals.

In 1905, Dr. Robert Koch and Dr. George Brouardel received the gold medals.

Next Meeting Place.

At this meeting, Dr. E. L. Trudeau, of Saranac, was appointed honorary member for the United States in place of Dr. William Osler, of Oxford, England. The meeting then adjourned to meet next year in Stockholm, Sweden.

Other Papers Read.

The following papers were also read: "Tuberculosis and Traffic," Surgeon-General Sternberg, U. S. Army; "Tuberculosis and Traffic," Dr. Sherman G. Bonney, Denver; "Transmission of Tuberculosis by Traffic," Dr. C. J. Baradat; "The Red Cross Society in the Crusade Against Tuberculosis," Dr. Gotthold Pannwitz, Berlin; "Work of the Red Cross Society," Miss Boardman, Washington, D. C.; "The Red Cross Society and Early Diagnosis of Tuberculosis," Dr. Frederick Helms, Berlin; "Danger of Tuberculosis Infection and How to Prevent It," Dr. J. F. Heymanns, Ghent, Belgium; "Aid of the Tuberculous Poor in Their Homes," Dr. S. Arloing, Lyons, France; "Sources of Acid Fasts," Dr. Stephen J. Maher, New Haven, Conn.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Sixth Session, held at Washington, D. C., Sept. 28-Oct. 3, 1908.

SECTION II—CLINCAL STUDY AND THERAPY OF TUBERCULOSIS.

Typho-Bacillose.

PROF. L. LANDOUZY, Paris: Although this form of tuberculosis has been encountered and recognized in civil and military practice, both in France and in other countries, it does not appear to me to have received sufficient attention from writers on nosology. I regard it, both pathologically and clinically, as one of the most distinct and clearly defined manifestations of acute septicemia due to the bacillus. At the time I discovered typho-bacillose, the pathologico-clinical manifestations of acute and subacute tuberculosis were currently divided into two distinct types: 1. In the first type, presenting itself in the form of a caseous bronchopneumonia, the tuberculous process within a few weeks or months produces infiltration and softening, ulceration and caseous degeneration—the identical picture, in fact, which requires several years for its production in the classic form of ordinary phthisis. At other times, presenting the form of caseous pneumonia, and running a more rapid course to a fatal termination, the tuberculous process, although characterized by caseation, has not time to reach the stage of ulceration and cavity-formation. These are the two forms of acute caseous phthisis. 2. In the second type the course of the disease is more abrupt. Whether the infection be generalized from the beginning, or a general dissemination of bacilli occur from an old tuberculous focus, the tuberculous process adopts the pace of a general infection, with rapid and fatal termination. The general intoxication of the organism and the wide diffusion of the pathologic process destroy the patient's life so rapidly that the lesions have not time to reach their normal development—fusion and caseation of the alveoli. The autopsy shows lesions entirely different from those produced in acute granular phthisis. The picture is that of an eruption of innumerable young miliary granulations, more or less diffuse, and it is the functional reaction which determines the clinical manifestations of the disease, whether respiratory, nervous or abdominal—these being the principal clinical types of acute granular phthisis, or *granulie d'emplis*. 3. In addition to these forms, and distinct therefrom I discovered certain others in which the bacterial intoxication and infection assume an entirely different aspect, with sufficient characteristic features to constitute a new type of bacillary septicemia distinct from the two preceding ones. This third type, called "typho-bacillose," manifests itself exclusively by a typhoid state, with continuous fever and enlargement of the spleen, and without any signs of visceral localization. At first glance there seems to be a striking resemblance to typhoid, due to the Eberth bacillus, and these two typhoid states are frequently confounded. Indeed, they can be differentiated only by certain delicate shades of differences in the symptoms. These consist, in the first place, in irregularity of the fever curve, which, although continuous as in typhoid, shows greater oscillations, and the irregularities observed from day to day, or from week to week, are greater. In the second place, there is a lack of correspondence between pulse rate and temperature, the pulse ordinarily being much more accelerated in typho-bacillose than in typhoid fever. There is also striking absence of localizing symptoms in the viscera; no pharyngeal or bronchial catarrh (which is constant in typhoid fever); no intestinal catarrh or constipation; and, finally, no rose spots. If, as happens, in rare cases, this bacillary continued fever terminates fatally in two, three or four weeks, the autopsy furnishes an explanation of this deceptive symptomatology in the absence of localizing signs in the viscera. Nothing is found but the ordinary congestive and degenerative lesions seen in all severe septicemias; the lesions are diffuse and show no special preference for any one organ. Occasionally a few minute granulations, no larger than the point or head of a pin, may be found. They are isolated, gray and translucent, and insufficient to produce a local symptomatology; in fact they barely suffice to stamp the disease with a special character. Laboratory methods in the past few years have furnished scientific proof of the existence of typho-bacillose and greatly facilitated the diagnosis of the condition. In the first place, we can make an absolute diagnosis of typhoid fever due to the bacillus of Eberth in every case by recovering the pathogenic micro-organism in the feces, by the Widal reaction, and especially by blood cultures. This method enables us to recognize with certainty disease caused by the paratyphoid bacillus. In the second place, inoculation of a guinea-pig with blood taken from a vein, reinforced by the serum reaction of d'Arloing and Courmont, Calmette and Guérin's oculo-reaction, and Jousset's inoscopy (Jousset, *Semaine Medicale*, January 19, 1905), enables us to recognize with certainty the septicemias caused by the bacillus of Koch. Applied to the diagnosis of typho-bacillose, these laboratory methods furnish the clinician an invaluable and indeed an indispensable aid in bringing certainty into the diagnosis. They enable us to eliminate typhoid fever, and often to catch alive the cause of the disease, namely the bacillus of Koch.

Specific Therapy of Pulmonary Tuberculosis.

PROF. ED. BÉRANECK, Neuchâtel, Switzerland: Antituberculous immunization up to the present time has given only relative results. These results, however, are sufficient to enable us to affirm that homotypic or heterotypic tubercle bacilli are capable of conferring on inoculated animals marked resistance to experimental or natural tuberculosis. The difficulties encountered in these attempts at vaccination are due to the biochemic character of Koch's bacillus. Although Koch's bacillus may act as a vaccine, it can not be used in its natural state in the treatment of a patient with tuberculosis. Under these circumstances it is necessary to make use either of the toxins secreted by this bacillus in the culture medium, or of the toxins constituting the body itself of this bacillus. Do the immunizing properties of the tuberculous toxins justify the utilization of these toxins in a specific treatment of tuberculosis? Yes. The different tuberculins are not identical with one another.

Tuberculin Treatment of Tuberculosis.

PROF. DR. K. HAMMER, Heidelberg: Tuberculin—old tuberculin and new tuberculin—deserves to be considered at length in the treatment of tuberculosis of the lung as well as of other organs. Tuberculin properly used is a harmless remedy. The physician prescribing it must be well acquainted with the technic of its employment and must have sufficient experience to be capable of judging the signs of reaction. Tuberculin can

be used in all—even in the most advanced—cases of tuberculosis. In these recovery can not be hoped for, but many disagreeable symptoms can be eliminated. Recovery is to be expected in cases of the first stage, also in cases of the second, and sometimes even of the third stage. The ideal method of treatment at present is a combination of the climatic with tuberculin.

Specific Curative Action of Tuberculin.

DR. E. MELISSEN, Sanitätsrat, Hohenhonnef: It is not proven that tuberculin has a specific curative action. Neither animal experiments nor the results obtained in man justify such a conclusion. The bewildering mass of new tuberculins and the constantly growing number of methods of application are sufficient proof that the question is still open, and that further experiments are necessary. The patient must be kept under the most careful supervision during the treatment with tuberculin. This is possible only in hospitals and institutions; hence the method is not suitable for general practice.

In judging the value of the tuberculin tests, one must distinguish between tuberculous infection, i. e., the formation of small latent foci, which is exceedingly common even in healthy individuals, and tuberculous disease, which manifests itself by clinical symptoms in the lungs. The old subcutaneous tuberculin test after Koch is a delicate reagent, both for tuberculin infection and tuberculous disease. It is not without danger and is too delicate for clinical diagnosis in general, and should be employed only in cases in which the local reaction can be observed. Von Pirquet's cutaneous tuberculin test, which is very simple and free from danger, is hardly less sensitive than the subcutaneous reaction. In doubtful cases it is even less suitable for clinical diagnosis than the former. It is, however, of value in studying the spread of tuberculous infection, and confirms the results of pathology. The conjunctival test of Wolff-Eisner is safe if properly carried out. It appears to be of value in determining the prognosis; or in other words, judging the resistance of the tuberculous organism. Absence of reaction, or a very feeble reaction in the presence of manifest tuberculosis, is a bad prognostic sign; while a positive reaction very probably indicates that the organism is still capable of fighting the disease, and if supported by hygienic, dietetic, or climato-therapeutic measures, may gain the victory.

Purposes of Tuberculin.

PROF. F. PETRUSCHKY, Danzig: Dr. Koch's tuberculin and similar preparations are sterile metabolic products of the tubercle bacillus. They serve three important purposes: First, For early diagnosis of latent tuberculosis; second, for specific treatment of the first stages of the disease; third, to control the recovery. In Germany tuberculin as a means of diagnosis and treatment has been adopted by the great majority of tuberculosis specialists. The cutaneous test (Pirquet's) affords a welcome simplification of the specific diagnosis. We should try most systematically to diagnose and treat tuberculosis with the aid of tuberculin while it is still closed and produces no infectious excretions. All attempts to segregate and to treat patients already infected are too late. All attempts at prophylaxis without employment of the specific remedy are like the use of a fire-engine without hose.

What We Are Trying to Accomplish with Tuberculin.

DR. E. L. TRUDEAU, Saranac Lake, N. Y.: A clearer conception of what we are trying to accomplish by tuberculin treatment is necessary. There are two main theories: the vaccination theory, which claims to bring about by injections a specific immunity to tubercle bacillus, and the toxin immunization theory which aims merely to produce by steady and gradual progression in dosage the greatest degree of tolerance or immunization to chemical poison of the tubercle bacillus. Under the first conception, the specific immunization to the bacillus are Koch's later attempts at producing an immunizing tuberculin, both local and focal reactions being looked on as useful in the production of the specific immunity to the bacillus; also the work of Wright and his vaccine treatment guided by the readings of the opsonic index. Under the toxin immunization theory, of which Denys and Sahli are the most brilliant exponents, the main feature of the treatment is to produce by progression in dosage the highest degree of tolerance to the poison of the tubercle bacillus attainable, considering reactions and all constitutional disturbance as not only not desirable but to be avoided as much as possible. Neither is quite satisfactory, owing to our imperfect knowledge of the mechanism of tuberculin immunization. If we must have a working theory and must decide between the two, I prefer for the present to hold to the conception of an immunity that is principally at least antitoxic as produced by the treatment and to consider tuberculin habituation its essential feature and the best guide to dosage. If we accept the toxin immunization conception as the essential feature of the treatment and guide to dosage instead of measuring the degree of a questionable antibacterial immunity by the opsonic index or attempting to produce it more or less empirically by a series of reactions the severity of which we can not in any way control, the main features in treatment would be: To raise the degree of tolerance to tuberculin to the highest point attainable in each case by an almost imperceptible and long-continued progression in dosage. To avoid general and focal reactions as much as possible and consider them merely as evidences of intolerance. To follow no arbitrary rule, as to rate of increase or maximum dose to be reached, but to be guided merely by the degree of toxin tolerance of each patient as shown by the symptoms and general condition though the highest individual maximum dose attainable be only a small fraction of a milligram or a cubic centimeter or more.

The Maragliano Serum at the Phipps Institute.

DR. LAWRENCE F. FLICK, Philadelphia: Maragliano presented a paper under the auspices of the Phipps Institute on March 28, 1904, in which he announced: "First, it is possible to produce a specific therapy for tuberculosis; second, it is possible to immunize the animal organism against tuberculosis as is done in other infectious diseases, and there is good reason to hope for an antituberculosis reaction in man." The institute sent Dr. M. P. Ravenel to Maragliano's laboratory to study his methods. Dr. Leonard Pearson was sent to Europe to study the methods of other men in serum work.

Some of Maragliano's serum was imported for use in the institute and Dr. Ravenel made the serum according to Maragliano's method. Twenty members of the staff used the serum and reported on it. The consensus of opinion of these men was that the serum had no specific value. The cows used for making serum were tested for tuberculosis and found free from it. They were guarded against infection. They were immunized by injections with material recommended by Maragliano. The serum given by them seemed to be as satisfactory as the imported serum. On June 16, 1907, one of the cows died of general tuberculosis. At autopsy she was found extensively diseased. The other cow was killed and was found to be slightly tuberculous. The death of the cow from general tuberculosis brings up two important questions: 1. Can an animal give an immunizing serum and itself not be immune? 2. Does the withdrawal of serum from an animal deprive it of its protection against the tubercle bacillus?

Maragliano's Serum.

DR. H. R. M. LANDIS, Philadelphia: Of 41 patients treated with Maragliano's serum, 7 (17 per cent.) showed evidences of marked hypersusceptibility (suffused face, dyspnea, oppression about the heart, rapid pulse, lumbar pain, muscular tremors, sense of impending death). No fatalities. These cases differ from the anaphylactic phenomenon seen in the guinea-pig in that there seemed to be no definite time for its occurrence. The anaphylactic phenomenon appeared in four of the cases after the third, tenth, twentieth and twenty-second injections. The injections were given every other day; dose varying from 1 to 3 c.c. In 2 patients the evidences of hypersusceptibility occurred twice after the third and fourth and after the tenth and eleventh injections. One case was atypical. The patient had fainting attacks and a sense of impending death after the sixth injection. These attacks con-

tinued throughout the treatment of twenty-seven injections. All these patients had advanced or moderately advanced disease and were confined to their beds. Ambulant patients in good condition did not develop anaphylaxis; 4 or 6 ambulant patients had the "serum disease." Skin eruptions appeared in 6 cases after the fourth, fourth, sixth, sixth, tenth and fifteenth injection. The other phenomena noted were herpes labialis in one; herpetic eruption about the site of injection in 3; there was a severe inflammatory reaction at the site of the injection in 7; adjacent lymph glands were enlarged and tender in 10; severe joint pain occurred in 3; lumbar pain in 2.

JOINT MEETING OF SECTIONS I AND II.

The Opsonic Index in Certain Tuberculous Infections.

DR. THOMAS WOOD HASTINGS, New York: From the nature of the tubercle bacillus infection (chronicity) and from the relation of opsonin to infection one is justified in applying studies of the opsonic index in non-pulmonary conditions to the problems relating to pulmonary tuberculosis. Among twelve pulmonary patients examined, two gave indices within normal limits, and this fact called attention to the inconstant occurrence of a low index in tuberculous infections. In ten pulmonary patients the few isolated determinations of the index were low, below 0.6, regardless of the condition. The indices, therefore, did not correspond to the clinical condition and they certainly were not to be used as guides to inoculation. The one fact emphasized by all the records is that wide variations in the index occur in tuberculous individuals, but not invariably over short periods of time, so that to establish a pathologic variation the safe plan is to estimate indices two or three times a week for a period of two weeks.

Experiences with the Cutaneous Tuberculin Reaction on Two Hundred Postmortems on Children.

DR. C. VON PIRQUET, Vienna, described the technic of the different new methods and the advantages of the cutaneous reaction:

Of 1,600 children, who in two Vienna children's hospitals underwent the cutaneous proof, 200 died and were carefully dissected; 68 cases were found to be positive in the reaction; 66 showed in the postmortem macroscopic tubercules; only in two cases was the result of the dissection uncertain, and in one of these a pleuritic adhesion of the pericardium was found. I came to the conclusion, therefore, that of a positive cutaneous reaction an infection of tuberculosis can be concluded. A negative reaction was found in the following: In all (109) remaining cases of negative postmortem; in several cases of fatal tuberculosis, particularly in older children, when the proof was only made some days before death; in cases of tuberculosis when the proof was made during the illness of measles; in some cases in which none of the above causes could be given.

The Opsonic Index in the Diagnosis of Pulmonary Tuberculosis.

DR. GEORGE P. SANBORN, Boston: This detailed study of the variation in the tuberculo-opsonic index was made in a case of pulmonary tuberculosis, under conditions of rest, moderate activity, hard work and after inoculation with tuberculin B. E. The observation covered a period of about two months in the patient's history, with opsonic determinations from one to three times a day during most of this period, undertaken in the clinic and laboratory of Prof. Sir A. E. Wright, November, 1907, with strict adherence to his methods. The aim was to achieve data on which to base specific treatment, which resolved itself into a study of the degree of autoinoculation that the patient was subject to from her own activities.

A study of the curves developed these points:

1. Rest and light work may be compatible with a repeatedly normal opsonic index.
2. Hard work may, however, produce an elevation in the opsonic power (auto-inoculation).
3. Correspondence between the effect of exercise and of tuberculin on the index is evident, suggesting similarity of stimuli.

The application to diagnosis then depends on the variation of the opsonic index following exercise. The latter must be varied to suit the case. Three methods of application. The advantages of such methods are: 1. Absence of discomfort to patient and greater accuracy than the old tuberculin test. 2. Avoidance of the conjunctivitis of Calmette's test. 3. Greater accuracy of localization than is possible with either, or with von Pirquet's reaction.

Accuracy of the Tuberculo-Opsonic Index and Its Value as a Control to Tuberculin Treatment in Pulmonary Tuberculosis.

DRS. HUGH M. KINGHORN, DAVID C. TWICHELL, NORMAN M. CARTER and MR. F. W. O. WERRY, B.A., Saranac Lake, N. Y., divided their joint paper into two parts. The first deals with the accuracy of the tuberculo-opsonic index, and the second with the value of the test as a control to tuberculin treatment in pulmonary tuberculosis. The authors think that while it is quite impracticable and impossible to use the test each day on each patient, yet from their work the test has shown itself to be of definite value with regard to spacing doses; namely, that the intervals between doses should occasionally be considerably longer than from three to four days. They regard the tuberculo-opsonic test as one of fair accuracy, but think that it is of doubtful value to control tuberculin injections on phthisical patients. They think that the aim of tuberculin treatment is rather to produce tuberculin immunization than merely to keep the opsonic index at a high level.

The Early Diagnosis of Tuberculosis.

DR. A. WOLFF-EISNER, Berlin: The subcutaneous injection of tuberculin is a delicate test of the existence of tuberculosis; but as it also shows latent tuberculosis, its clinical value is relatively slight. The same is true of the cutaneous reaction, which may, however, be employed for purposes of diagnosis because it differs from the subcutaneous injection by being absolutely free from danger, and because a negative result is of considerable diagnostic value. The conjunctival reaction gives positive results only in the presence of active tuberculosis. It can be proved that the reaction is positive in 85 per cent. of all cases of active tuberculosis in the initial stage, and, conversely, only 25 per cent. of apparently healthy individuals react positively as compared with the subcutaneous method. The conjunctival reaction is absolutely without danger if the contraindications are observed. The conjunctival test with 1 per cent. tuberculin should not be employed when there is actual or suspected ocular tuberculosis, and when the patient has had an attack of tuberculous keratitis or phlyctenular conjunctivitis. I distinguish the normal reaction, which runs its course in 4 days; the rapid reaction, which is complete in 24 hours and indicates an unfavorable prognosis; the permanent reaction, which persists for from 6 to 20 days, and is a favorable prognostic sign; it is observed chiefly in cases of healed tuberculosis. The prognostic significance of the reactions is very great.

Conclusions from One Thousand Eight Hundred and Seven Conjunctival Tuberculin Tests by a Uniform Method.

DR. EDWARD R. BALDWIN, Saranac Lake, N. Y.: The cutaneous test was applied in 52, and the subcutaneous in 89 cases, followed by a considerable increase in percentage of positive reactions in the suspected class. The conclusions are: The conjunctival tuberculin test performed with weak solutions by a single instillation has some value in confirming the presence of tuberculosis in the early stages. It has little value when the symptoms of tuberculosis lead only to a suspicion. Its value in distinguishing "active latent" from healed tuberculosis in apparently healthy persons has not yet been determined. Repetition of the test in the same eye has no advantage over the cutaneous and subcutaneous tests in the percentage of reactions produced, and may be misleading and dangerous. Repetition in the other eye by my method offers so little advantage that it can not be recommended. The conjunctival reaction is unreliable for prognosis. Used with the proper precautions, danger to the eye is slight and

need not preclude the test when other methods are inapplicable, as when fever is present. It should be restricted to adults, since the cutaneous test has been found equally valuable for children, and is harmless. The cutaneous test by the simultaneous use of dilute and strong tuberculin offers a method of at once detecting or excluding tuberculous infection with no danger or inconvenience. Experience is needed to show the value of this method. The subcutaneous test should be restricted to those cases in which a focal reaction is desired and when the other tests result negatively.

Ocular Reaction to Tuberculin.

DR. FERNAND ARLOING, Lyons, France, confined himself to a report of personal clinical and experimental facts:

The experimental facts, which show that a positive ocular reaction to tuberculin may be obtained in non-tuberculous subjects, accord with the clinical cases of positive reactions in the non-tuberculous suffering from typhoid, staphylococcic, syphilitic or some other infection. To sum up, the ocular reaction is a convenient and easily available diagnostic procedure; it sometimes fails in patients who are certainly tuberculous; and on the other hand, may occur in subjects not suffering from a bacterial infection. Its diagnostic value, although considerable in practice, is nevertheless not absolute. The test is not always harmless. It has not proved itself superior to the bacillary serum agglutination, which has the advantage over the ocular test of being absolutely harmless, more constant and more delicate. Finally, the ocular reaction is an indication rather of the degree of intoxication of the organism, while the serum reaction reveals the forces available for defense against the infection.

Use of the Differential Cutaneous Reaction in Diagnosis, Pathology and Treatment of Tuberculosis.

DR. LADISLAUS DETRE, Budapest, described a modification of von Pirquet's procedure, which consists in the application to the skin, after von Pirquet's method, of three different substances at the same time: (a) Concentrated old tuberculin; (b) filtrate of a culture of human tubercle bacilli; and (c) filtrate of a bovine culture.

The reaction to human or bovine toxin should be determined under the following conditions:

(a) To confirm a difficult diagnosis and answer certain hygienic questions in regard to infection-carriers and the mode of infection (inhalation or ingestion).

(b) In the study of the question of the dualism of the tubercle bacillus. Cattle react much more vigorously to bovine than to human filtrates.

(c) To answer the question in regard to the origin or type of the bacillus or tuberculins (or filtrates), which can be done in from twenty-four to forty-eight hours by selecting the test individual according to his reaction to human or bovine tuberculin.

(d) When it is desired to immunize a patient for therapeutic purposes, to the toxins of both types of bacilli.

Most tuberculous individuals can readily be immunized with the concomitant toxin, and are intolerant to the dominant filtrate; hence the therapeutist will select the substance to be employed by the cutaneous picture, and thereby avoid the unpleasant after-effects which sometimes follow the use of unsuitable toxins. The concomitant filtrate produces immunity to the toxin, while the dominant produces intolerance. By means of the systematic employment of the differential cutaneous reaction it is possible to immunize a patient against the toxin; provided, of course, that the clinical symptoms are kept under accurate observation, with much greater ease and certainty than has heretofore been possible. The technic is simpler, the results are objective and more certain, and more easily perceived than the results of the opsonin method. The differential cutaneous reaction is recommended to other investigators who wish to gain an insight into the pathologic conditions of tuberculous patients, and who endeavor to influence the tuberculous process by immunization methods.

The Conjunctival Reaction of Tuberculin.

DR. V. MALMSTRÖM, Stockholm, has experimented with the conjunctival reaction on 252 patients:

Out of the established tuberculous patients, 69 per cent. gave a positive reaction at the first experiment, 17 per cent. only at the second one; total, 86 per cent. Out of the suspicious cases, 37 per cent. gave a positive reaction at the first experiment, 10 per cent. only at the second one: total, 47 per cent. Of the patients clinically exempt of tuberculosis, 10 per cent. gave a positive reaction at the first experiment, 4 per cent. only at the second one: total, 14 per cent. In some cases the reacting brought about fever. Of the 25 cases in which a postmortem examination has taken place, 20 (9 tuberculous, 11 not tuberculous) confirmed the result gained by the conjunctival experiment. In 5 cases, which had not reacted, tuberculous alterations were found. A patient suffering from diabetes mellitus reacted positively at the second experiment, but did not show any clinical signs of tuberculosis. At the postmortem tuberculous alterations were found in the glands of the mesenterium of the small intestine, otherwise there was no tuberculosis. On 11 patients subcutaneous as well as conjunctival experiments with tuberculin have been made. There was complete concordance in 8 cases, difference in 3. From the foregoing experiments the conclusion is drawn that the conjunctival reaction, though of the greatest value as a diagnostical expedient, gives no verdict, either in a positive or in negative direction.

Serum Diagnosis of Tuberculosis.

DR. MARY C. LINCOLN, Chicago, read this paper, which will appear in full in THE JOURNAL.

Cutaneous and Conjunctival Tuberculin Reactions in the Diagnosis of Tuberculous Infections.

PROF. A. CALMETTE, Lille, France: Of 2,894 clinically tuberculous patients, 92.05 per cent. gave positive reactions to the conjunctival test; of 1,081 persons with clinical suspicion of tuberculosis, 57 per cent. were positive, and of 2,328 persons either apparently healthy or without suspicion of tuberculosis, 16.8 per cent. were positive with the same test. Of 55 children or adults who had given positive conjunctival reactions, although not previously suspected of tuberculosis and who came to postmortem, macroscopic tuberculosis lesions, most frequently in the tracheobronchial glands were detected in 49. In 6,303 tests, the only complications noted were in 3 phlyctenular keratitis, in 20 conjunctivitis, and in 72 reactions prolonged beyond three weeks. In no instance did graver disturbances or permanent ocular lesions or visual defect occur. In general early reactions are observed most frequently with suspected tuberculosis, and late and slight reactions with developed tuberculosis. Cachectic patients and those with acute miliary tuberculosis, tuberculous peritonitis and hypertoxic tuberculous infections react very feebly, late or not at all with the conjunctival as well as with the cutaneous and subcutaneous tests. Experimental and clinical observations demonstrate that the ophthalmic test reveals almost always active or developing tuberculous foci, but is negative with simple carriers of bacilli and with those with calcified or healed lesions, who it would seem often react to the cutaneous test. Repeated instillations of tuberculin in healthy subjects never give a reaction when the interval between successive instillation does not exceed five days. Local anaphylaxis disappears in about twenty-five days. In general, no ocular reaction occurs in patients treated with subcutaneous injections of tuberculin until over a month after suspension of treatment. Conjunctival redness may reappear as the result of subcutaneous injection of tuberculin as late as six weeks after submission to the ophthalmic test. A positive result by the double test furnishes almost conclusive evidence of the existence of an active tuberculous focus. Other well-recognized clinical and laboratory methods of diagnosis still hold an important place.

Studies of Tubercle Bacilli from the Tissues of Special Forms of Primary Cervical Adenitis in Man, Particularly Intermediate and Atypical Varieties.

DR. CHARLES W. DUVAL, Montreal, read a paper which was based on the study of atypical forms of the tubercle bacillus isolated directly from the tissues of four cases (human) of primary cervical adenitis.

In each patient the clinical picture completely corresponds;

the disease first began as a neck swelling, which rapidly increased in size and in six to eight weeks from the onset proved fatal. Autopsies showed primary lesion in cervical region and acute general miliary tuberculosis. Pure cultures of the tubercle bacillus were recovered directly from the cervical pus at the time of surgical intervention. In two cases the enormous numbers of acid-fast bacilli in the internal organs were remarkable (analogous to the picture sometimes seen in leprosy and avian tuberculosis). Of the four cultures studied one corresponds to the bovine and another to the human type (according to Theobald Smith). The two other cultures are "intermediate" or atypical forms. It is impossible to classify them with the bovine or human groups. One is perhaps a modified bovine strain. The other may be an avian type attenuated by its sojourn in man. The cultures have been carefully studied and compared with well-known avian, bovine and human types over a period of two and a half years. I critically studied the Theobald Smith glycerin-bouillon reaction from the following standpoints: (1) its value in the routine separation of the two main groups of tubercle bacilli (its practicability); (2) does it serve to separate bacilli of the lower-host species; (3) whether it is a qualitative means of identifying modified bovine types of bacilli in the human body; (4) the explanation of the reaction.

DISCUSSION.

DR. WILLIAM H. PARK, New York, described the types of tubercle bacilli present in pulmonary tuberculosis and in certain other forms of the disease in human beings. He gave a preliminary report of the work done by Drs. Woglom, Krumwiede and Montgomery.

DR. R. A. LEWIS, Boston, discussed the subject of tuberculous cervical adenitis, and presented a study of the tubercle bacilli cultivated from fifteen consecutive cases.

SECTION III—SURGERY AND ORTHOPEDICS.

Two Clinical Cases Suggesting the Surgical Possibilities in Tuberculous Meningitis.

DR. H. P. STITES, Paducah, Ky., reported two cases of tuberculous meningitis in which he had trephined the skull and established drainage, followed by recovery:

The first case was a female child, aged 10. A medium-sized button was removed from the skull in the temporoparietal region just above the lateral sinus on the left side. The location of the opening was suggested by the marked symptoms on the right side of the body. The membranes bulged into the wound, and a free incision was made. A quantity of serofibrinous fluid escaped, in which tubercle bacilli were later demonstrated. The child regained consciousness immediately after recovering from the ether. On the eighth day after the operation the wound was allowed to close, and alarming symptoms appeared, but they were immediately removed on reestablishing drainage. The patient recovered entirely and is now well. The second case was that of a man, aged 29. In this case also tubercle bacilli were found in the discharge. Recovery took place as in the other case. I believe that surgical interference in these cases will often save life.

Tuberculosis of the Breast.

DR. WILLIAM ROGMAN, Philadelphia: This disease has been considered very rare. A study of 1,500 cases of disease of the mammary gland in St. Bartholomew's Hospital, London, has shown 1.5 per cent. of that number to be tuberculous. It occurs most commonly between the ages of 25 and 35. The pathologic forms are the discrete and confluent forms, intramammary abscesses and acute miliary tuberculosis. Tuberculosis is rarely associated with carcinoma, the author having been able to find but five cases in the literature, and one case of his own. The discrete form is difficult to recognize, the confluent form easy. It is apt to be confounded with actinomycosis, syphilis and carcinoma. The prognosis depends largely on whether the disease is primary or secondary; in the former it is good, in the latter bad. The surgical treatment consists in curetting and excision or amputation of the breast. It remains to be shown whether anything short of amputation of the breast is a safe remedy. At the same time, that is a serious remedy and would often be objected to by young unmarried women. In such cases it is better to perform plastic resection, and then amputation later, if necessary. He believes that vaccine therapy and Bier's hyperemic method should be used only as valuable adjuncts to the surgical treatment.

DISCUSSION.

DR. CARL WIRTH, St. Paul, Minn.: Was the milk from any of these tuberculous glands examined? I had a case in which an infant developed marasmus, and it was later found that the breast it had been nursing was tuberculous.

MR. ARBUTHNOT LANE, London: Complete removal is the most effective treatment. All these patients whom I have seen suffered from autointoxication and constipation, as is the case in other forms of tuberculosis. The autointoxication has materially lowered the resistance of the individual, and an important element in treatment is thorough gastrointestinal drainage. The practice of the older practitioners in always ordering a purge when a patient is first seen is a good one.

DR. ROGMAN: No examination of the milk was made.

Outdoor Treatment of Surgical Tuberculosis.

DR. DE FOREST WILLARD, Philadelphia: Outdoor life night and day is as essential in the treatment of tuberculosis of bones and joints as in medical cases. Early diagnosis, with treatment by sunshine, fresh air, rest and proper mechanical and surgical procedures will prevent, and cure without deformity, a large majority of patients with joint diseases—25,000 doses of pure air in twenty-four hours are infinitely better than three doses of nauseous drugs that disturb digestion. Tubercle bacilli die in sunshine, but thrive in darkness, vitiated air and filth. They are inhibited by cold. Cold increases appetite, nutrition and circulation and encourages exercise and sleep—color, weight, strength and hemoglobin increase. A change from seashore to mountain is desirable. It has been shown that 90 per cent. of joint cases come from the poorer classes. Surgical sanatoria and hospitals separate from pulmonary cases are needed. They should be so constructed that, by means of movable window sashes, the beds may be thrown either outdoors or indoors, thus giving when needed the advantages of a warm room for surgical dressings and needed care, while at the same time the aseptic conditions prevent fatal mixed infection. It is obvious that joint patients require level ground for use of crutches. The housing of patients in tents has been found unsatisfactory, the tents being hot in summer and cold in winter. I advocate the building of roomy porches for beds, connected with private rooms or with hospital wards, open in summer and glass inclosed in winter. The windows should be large. There should be wheeled litters, screens, awnings, roof gardens. Portable cottages, day camps near cities and forest schools for patients with hereditary tendencies should also be considered. There should be protection from cold. Newspapers should be placed under the mattress, and there should be plenty of clothing. Good food is essential. Great care is necessary in the selection of a situation. Many country houses are most insanitary. Tuberculosis of kidney, pelvis or viscera require the same treatment.

DISCUSSION.

DR. JOHN M. T. FINNEY, Baltimore: Johns Hopkins Hospital was the pioneer in this country in advocating the outdoor treatment of surgical tuberculosis. In the early days of the hospital Dr. Halsted insisted on keeping these patients out of doors. The results have been most satisfactory. Early diagnosis is important, as many of these patients are treated at first for rheumatism.

DR. R. W. CORWIN, Pueblo, Colo.: All patients with tuberculosis, surgical or otherwise, should be treated in the open air and not in the hospitals of the large cities. There are two reasons why hospitals for tuberculosis have not been removed to the country, and these are ignorance on the part of the municipal authorities and because doctors are too lazy to go out into the country.

DR. CARL WIRTH, St. Paul, Minn.: Has secondary infection of the lungs been observed? In 4,000 cases of joint tuberculosis I have never seen a secondary infection of the lungs.

DR. L. H. MONTGOMERY, Chicago: It is universally conceded that the open-air treatment of any form of tuberculosis, whether surgical or otherwise, is desirable.

DR. DE FOREST WILLARD: In my experience tuberculosis of the lung occasionally occurs after tuberculosis of the joints, but rarely. The majority of my fatal cases were due to tuberculous meningitis, and not to secondary lung tuberculosis.

Tuberculosis of the Nose, Mouth and Pharynx.

DR. H. P. MOSHER, Boston: Owing to the protective power of the nasal mucous membrane primary tuberculosis of the nose is rare. Primary tuberculosis is characterized by a superficial ulceration situated over the anterior part of the cartilaginous septum. Secondary tuberculosis of the nose is more common than the primary form. It is part of a general or of a pulmonary tuberculosis. The secondary form tends to produce tuberculosis tumors. Nasal tuberculosis has a slow, painless and progressive course. As a rule it does not extend to the pharynx. In making a diagnosis of tuberculosis of the nose the chief disease to exclude is syphilis. The final absolute test of tuberculosis of the nose, mouth and pharynx is the finding of tubercle bacilli. These are very hard to detect in tissue removed from the nose, mouth or pharynx. The finding together of giant cells and caseation is strong proof of tuberculosis. Before making a diagnosis of tuberculosis of the mouth, syphilis must be ruled out. In cases in which tuberculosis causes an abundant overgrowth of nodular tissue the presence of malignant disease is simulated. Tuberculosis of the pharynx is not uncommon as a secondary infection from tuberculosis of the lungs. The importance of tonsillar tuberculosis lies in the fact that an overwhelming majority of enlarged cervical glands are tubercular and that these glands are infected from the tonsils. Cervical tuberculosis is limited to the glands of the neck; it seldom gives rise to tuberculosis of the apex of the pleura or the lungs. The first step in the treatment of enlarged cervical glands is to remove the tonsils by thorough dissection. The treatment of tuberculosis of the nose, of the mouth and of the pharynx is the thorough removal of the tubercular tissue with the curette and the subsequent use of lactic acid. In this way small lesions may be made to heal; large lesions also may be made to heal for a time, but they break down again. In small primary lesions of the nose, of the mouth and of the pharynx, the use of tuberculin would seem to have a special field.

DISCUSSION.

DR. WILLIAM E. CASSELBERRY, Chicago: A child was brought to me with cervical adenitis and chronic hypertrophy of the tonsil. The lymphatic glands of the neck were enlarged and indurated. The duration might have been three weeks or three months. I was asked: "Are those glands tuberculous, and, if so, shall they be removed surgically?" In this connection, I always remember a series of several hundred cases examined at autopsy and after operation and reported from a hospital in Liverpool, in which about three-fifths of the entire series were found to be tuberculous and the remainder a simple pyogenic infection of the glands. We have no means of determining in the living child, especially when the condition has not been in existence for a great time, whether it is tuberculous or not. My opinion under these circumstances is that the enlarged tonsil which has been the source of the infection, whether tuberculous or simple pyogenic, should be removed—wholly removed—with its capsule. The surgeon should then wait from three to six months. If the enlarged glands disappear after the removal of the tonsils, then in all reasonable probability they were not tuberculous. If they do not disappear, they are probably tuberculous, and should be removed surgically, by external operation.

DR. H. P. MOSHER: There are two well-defined classes of cases of tuberculosis of the larynx—the hopeful cases and the hopeless. One should keep his hands off in the latter cases.

Tuberculosis of Cervical Lymph Nodes.

DR. CHARLES H. DOWD, New York, reported 275 cases treated by radical extirpation:

The disease is a serious one, probably with a mortality rate a little below 50 per cent. when untreated. I have studied 20 cases of bovine and human forms of infection. Small hard postoperative nodules are significant. The operation is usually a scar-saving procedure. The mortality rate of thorough operation is 0.33 per cent. The cures are apparently about 80 per cent., with another 10 per cent. or more of improvements.

DISCUSSION.

DR. E. M. SALA, Rock Island, Ill.: I have had good results in these cases with the *x*-ray treatment, as it makes the nodules disappear in a reasonable length of time. I give ten minutes' exposure with a good strong light at a distance of five or six inches from the tube. I have had no severe burns at this distance. Surgery is the proper course of procedure, but when for any reason that can not be resorted to, good results can also be obtained from the use of the *x*-ray.

DR. CHARLES H. MAYO, Rochester, Minn.: Children under 8 seldom require operation. The local focus of infection should be removed, if possible, that is, the tonsil, adenoid conditions in the throat, and nasal troubles. If, after such treatment, there still remains for a long period enlargement of the glands of the neck, then operation is indicated. Later in life most of these patients should be treated, not only by removing the local focus, but by removing the glands. It is best to recognize only three groups of glands, a deep group on each side, and a submaxillary and submental group. If tuberculosis attacks one gland, the whole group must be removed. The lymphatic system is very closely connected with the blood, and it is no farther to the lungs through the lymphatics than it is through the air passages. Recurrence takes place because the entire group of glands has not been removed.

DR. EMIL G. BECK, Chicago, discussed the use of bismuth-vaselin paste in the treatment of sinuses in connection with tuberculous glands of the neck. Only three patients have come under my observation who were treated by this method. Two of these cases have been reported by two physicians from Mississippi, who had injected the paste into sinuses which were left after operation. I have treated only one case, and in that I have used it to prevent a sinus. This patient was so tuberculous and had so many sinuses that operation was not advised, but one of the glands was suppurating and ready to open. It was opened with a very small incision, the bismuth paste was injected, and healing took place without the formation of a sinus.

DR. C. H. DOWD: I have found one class of cases in which the *x*-ray treatment is valuable—those in which infection is very virulent. The tissue resistance in these is very low. Such a patient will perhaps have involvement of the sterno-cleidomastoid. The glands may be removed as thoroughly as possible, but a few weeks after operation there will be diffuse swelling in the area of operation. These cases are unfavorable for further surgical work. Nothing will remove the tuberculosis short of the most radical procedure, taking out the muscle or as much as may be involved, likewise the nerves that may be implicated. This may be done for cancer, but I do not believe that it is wise to do it in tuberculosis. These patients do very well under *x*-ray treatment.

Retroperitoneal Tuberculous Glands and Their Relations to Spinal Symptoms. (Tabes Mesenterica.)

DR. CHARLES F. PAINTER, Boston: There are many intra-abdominal and intrathoracic pathologic conditions which confuse the diagnosis of tuberculosis of the spine. Among the most common of these are accumulations of tuberculous glands in the mesentery or behind the peritoneum. Glandular infection may occur from intestinal absorption, and the relation of accumulations of glands to the anterior surface of the vertebral column should be borne in mind. I have seen cases of retroperitoneal glandular enlargement. A careful study and physical examination are of value in arriving at a diagnosis. Treatment may be divided into hygienic, operative and medicinal.

DISCUSSION.

DR. WISNER R. TOWNSEND, New York: I appreciate the importance of conditions which simulate spinal disease, and I

think that the Boston school of orthopedics deserves a great deal of credit for bringing forward information on this subject. The most important thing this school has done in the last few years in regard to spinal lesions is in having made it possible to differentiate the symptoms more clearly. It is unfortunate in this class of cases that an early diagnosis often can not be made. It is a good thing to call attention to the fact that these conditions exist, and that they are not so uncommon as has generally been supposed. A great many escape observation entirely, being treated as lumbago, etc., whereas in reality they are the beginning symptoms of a more serious condition.

DR. CHARLES H. DOWD, New York: Is removal of the mesenteric glands possible in these mild cases? I have had experience in well-marked cases of tabes mesenterica, and have been surprised to find how easy it is to remove large masses of these nodes and to get good healing. I have not had any experience, however, in operating on the class of patients referred to in the paper. Surgery surely offers a very promising field of treatment for this condition.

DR. C. F. PAINTER: A good deal of work has been done on the aggravated form of mesenteric enlargements, but I have not operated in any of the cases of the milder type. I have been unable to persuade surgeons of the advisability of doing laparotomies in these cases. I have seen some serious cases, which surgeons have considered hopeless, and in which spontaneous recovery took place; therefore, the determination of what cases should be subjected to surgical treatment is still an open question.

Surgical Aspects of Tuberculosis of the Lungs and Pleura.

DR. SAMUEL ROBINSON, Boston: The twentieth century has witnessed an advance in the technic of intrathoracic surgery by the introduction of the negative pressure method of avoiding the dangers of pneumothorax and also by the perfecting of the positive pressure method of obviating these dangers. The investigations of Sauerbruch, Brauer, Matas, Smythe, Greene, Janeway, Mayer, Tuffier, Seidel have proved that exploratory thoracotomy is attended by no greater danger than exploratory laparotomy. The above investigators will also agree that the partial or complete removal of one or two lobes of either lung is an operation which can be regarded as attended with little danger to the patient. The latter conclusion is based largely on animal experimentation, but it is a well-known fact that the human thorax is less prone to infection and less susceptible to the dangers of pneumothorax than that of most animals which have been used in animal experimentation. The human mediastinum being a comparatively unyielding structure, the conditions of the unopened side of the thorax are not as unfavorable as is the case especially in the dog. Granted, however, this newly justified procedure of thoracotomy for exploration or partial pneumectomy, what can be said as to the prospects of successful surgical attack on pulmonary tuberculosis? An insufficient number of patients has been operated since the perfecting of the new apparatus methods from which to draw any conclusions. It can no longer be justly stated that tuberculosis of the lung and pleura is out of reach of the surgeon, but the question remains an open one as to whether drainage or excision of tubercular foci in the thoracic cavity can ever result in the removal of the infection. It is at least to be hoped that the disease may be more successfully attacked by vaccine therapy and hygiene if the larger cavities of infectious material have meanwhile been excised or drained by the surgeon.

DISCUSSION.

DR. EMIL G. BECK, Chicago, mentioned some experiments which Dr. Opie, of the Rockefeller Institute, New York, has been carrying out.

Dr. Opie infected the pleuræ of dogs with tuberculosis, and after they had developed the symptoms of tuberculous pleurisy the pleural cavities were injected with white blood corpuscles obtained from the pleural cavity of a healthy dog after the injection of an irritant. Dogs treated in this way and killed after a certain period of time showed that the pleural cavity had nearly healed, while the animals which were not treated in this manner died with the general symptoms of tuberculosis. At least 75 per cent. of all empyemas are the result of tuberculosis of the pleura and lung. Dr. Beck mentioned his method of treating empyema and tuberculous pleurisy by the injection of a bismuth-vaselin paste.

DR. RUSSELL BELLAMY, Wilmington, N. C.: The work done by Dr. Robinson on rabbits is a tremendous step forward. I think that even if he is not successful to the extent of being able to attack the abnormal, his paper will be read by some one who will be able to bridge this chasm, and soon surgeons will be able to approach tuberculosis of the lung as the doctor has suggested.

DR. H. BERLIN, Chattanooga, Tenn.: We have been able to do something with negative pressure, and if we can get a positive pressure apparatus that is successful we will be able to do much more. Lung abscesses can be opened by this method, but what can we expect in a general tuberculosis of the lungs? We may be able to remove one or even two lobes of a lung, as has already been done in animals, but in what way can it benefit the patient to have this done?

DR. S. ROBINSON: Some surgeons have said to me that they have opened the pleural cavity without any apparatus, and they do not see the need of apparatus and think that I give it undue credit. Although many operations have been done without apparatus, there is no way of telling whether the patient will collapse on opening the pleural cavity, and it is a duty at least to have ready some form of apparatus to prevent that collapse. In the first thirty operations on dogs the operations consisted in removal of a greater or less portion of the lung, and out of the thirty operations there were twenty-one recoveries. The deaths were largely in cases in which an attempt had been made to remove the entire right lung. In these operations it is absolutely necessary to have the apparatus going. If the apparatus breaks, the animal collapses immediately. By pulling the lung into the opening in the chest wall the symptoms of collapse can be arrested. A great deal of the surgery of the chest in the last fifty years has consisted of this procedure. I am convinced that the disastrous results in dogs are due to the mobility of the mediastinum, which is not the case with the rabbit; in the rabbit the heart seems to occupy a greater portion of the mediastinum than is the case with the dog.

SECTION IV. TUBERCULOSIS IN CHILDREN ETIOLOGY, PREVENTION AND TREATMENT.

Tuberculosis in Infants: an Analysis of 130 Hospital Cases as Regards Etiology and Diagnosis, with Remarks on Prevention and Treatment.

DR. L. E. LA FETRA, New York: The patients were all under 3 years, and the majority under 1 year of age. The mother, father or some one in close contact with the patient was found to have suffered from tuberculosis—almost invariably pulmonary—in nearly half of the pulmonary cases and in over one-third of the meningeal cases. Of the meningeal cases more than half had pulmonary tuberculosis. In the majority of the pulmonary cases it is impossible to make a diagnosis from examination of the chest. Some patients give no signs; many have simply generalized râles, while others have signs of bronchopneumonia or lobar pneumonia; very few give characteristic signs such as those of consolidation with adhesions or of cavity. The location of the consolidation is not characteristic. For an absolute diagnosis one must either find the tubercle bacilli in the sputum or see the lesions. A positive skin reaction in these young patients, however, is almost certain. If careful sputum examination and the skin test are both negative, one can feel safe in ruling out tuberculosis, no matter what the signs in the chest. Of the 73 pulmonary patients, 34 died, 29 were unimproved and 10 improved. Four patients seem to have recovered completely, with no signs in the lungs from one to two years after leaving the hospital. Prophylactically, the mother and father in a tuberculous family should be warned, before the child is born if possible, that tuberculosis is communicated to the offspring by close contact, especially such as nursing a tuberculous mother and by kissing. As complete isolation from the afflicted person as possible, prevention

from crawling on the floor, and the use of only washable rugs on the floor—these measures, together with the usual hygiene, should be enforced. Milk from untested cattle should be sterilized. All children of tuberculous families should be examined periodically for physical signs and for the tuberculin skin reaction. In suspicious cases the child should be at once put under active treatment, if possible in a country home, forest school or sanitarium. Persistent coughs in infants should be actively treated, lest tuberculous meningitis supervene.

Tuberculosis in Children, Particularly with Reference to Tuberculosis of the Lympathic Glands.

DR. THEODORE SHENNAN, Edinburg, presented tables which epitomize the results of an investigation of the postmortem reports of cases of tuberculosis in children who had been in patients in the Royal Hospital for Sick Children, Edinburgh.

Out of more than 1,000 postmortem examinations, 407 were made on children dying from tuberculosis, and these reports are based on the last 307 of these cases. The important facts brought out refer to the frequency of occurrence of the disease in lymphatic glands, and to the dissemination of tuberculosis from these glands. The glands were affected in a very large proportion of cases—77.8 per cent. The thoracic glands were more frequently implicated than the abdominal. Excavation of the lungs was comparatively infrequent. In tuberculosis of abdominal glands 50 per cent. were unaccompanied by ulceration of the intestine, and in two-thirds of the cases in which there was ulceration of the intestine there was no excavation of the lungs. In 60 cases altogether (19.5 per cent.) ulceration of the intestine was present, without any preceding excavation of the lungs. In 137 cases (44.6 per cent) death was immediately due to tuberculous meningitis, and this appeared to follow dissemination from caseous glands—especially thoracic—in the vast majority of instances.

Relation of the Infectious Diseases—Measles, Whooping Cough and Influenza—to Tuberculosis in Children.

DR. EDGAR P. COPELAND, Washington, D. C.: The disease is widespread, but is looked on by the public with insufficient seriousness. Though tuberculosis is observed to follow measles, whooping cough and influenza as sequela and complication, it is difficult to determine the relation and the proportion of cases in which the relation is observed. Statistics show tuberculous lesions in 31.2 per cent. of deaths from measles. The prevalence of latent tuberculosis is of importance. Catarrhal inflammation of mucous membranes, associated with hyperemia and lymphatic activity, is common to all three diseases. Lymphatic activity determines a dissemination over the body. The picture observed is usually general miliary tuberculosis with the pulmonary symptoms predominating. Influenza, though giving rise to many obscure chest conditions, is seldom followed by tubercle except when latent condition exists. Considering the prevalence of measles, whooping cough and influenza, tuberculosis does not follow sufficiently often to be of great importance. Its development in all cases is dependent on a latent focus of disease; and the dissemination is directly due to lymphatic activity.

Inquiry into the Opsonic Power of Breast Milk for Tubercle Bacilli.

DR. WILLIAM J. BUTLER, Chicago: It is a matter of observation that infants nursed by their mothers less frequently develop tuberculosis and many other infections than those children that are artificially nursed. It is generally considered that breast-fed infants are guarded in a measure by protective substances contained in human milk which are not present in cow's milk. It has been shown that diphtheria and other antitoxins, under certain conditions of immunity, are excreted with the milk. I have investigated, under normal conditions, the opsonic power that exists in human milk for the tubercle bacilli and other organisms, and compared them with those which are found in cow's milk, the latter forming the basis of artificial food for infants. The results of these investigations indicate that so far as this class of protective substances (opsonins) is concerned, the human milk is practically without them. I am continuing my work with a view of determining whether in conditions of disease such protective substances are excreted, or if this may be brought about by immunizing the mother against the infectious agent.

Children of the Tuberculous.

DR. THEODORE B. SACHS, Chicago: The well-known type of pulmonary consumption of the adult is, in a large proportion of cases, but the final result of successive infections, commencing in infancy and childhood. This is the growing conviction of the medical profession. "An effective protection of the child from every source of tubercle infection (bovine or human) is expected to result in an appreciable reduction in the general tuberculosis mortality of all periods of life. The disease is not inherited, but acquired through close association with tuberculous parents, who are either careless in their disposal of sputum or whose home surroundings are so defective in hygiene as to make the spread of infection absolutely unavoidable. I have examined 322 children of tuberculous parents, of the laboring classes, in one of the congested districts of Chicago. Twenty-nine per cent. of these children presented positive manifestations of the disease and about 10 per cent. more were classed as suspicious. A somewhat larger proportion of tuberculous cases among the children born after the parents became tuberculous may be ascribed to the effect of closer contact with the source of infection in the more crowded and unhygienic surroundings into which the family of a consumptive drifts with the progress of his disease. The mortality from tuberculosis among children in general gives but a scant idea of the number of children infected. A large number of children infected in the homes of consumptive parents present but mild manifestations of the disease requiring thorough medical examination for their detection; slight afternoon rise of temperature, defective nutrition and numerous other symptoms are overlooked in cases positively tuberculous. Through years of indefinite symptoms the child gradually develops all the stigmata of the phthisical type, when in the latter part of the second decade, or between 20 and 30 years of age, the disease is present in all its manifestations. To prevent development of tuberculosis in adult life, all possibilities of infection must be eliminated in infancy and childhood.

Transmission and Progress of Tuberculosis in Children Through Family Association.

DR. CLEVELAND FLOYD, and DR. HENRY D. BOWDITCH, Boston, contributed a joint paper on this subject:

As part of the work carried on at the Boston Consumptives Hospital during the past year about 1,000 children have been examined and treated. These children have been taken from the poorest homes in the city where consumption already exists, and the effort made to determine how many were infected and needed care. Of 679 children coming from tuberculous homes 36 per cent. were found to be suffering from tuberculosis of the lungs and 66 per cent. gave evidence of tuberculosis somewhere in the body. Many of these children had few or no symptoms of the disease and yet its presence was unmistakable. Children are peculiarly susceptible to bad surroundings. Overcrowding, lack of fresh air and sunlight, dirt and neglect prepare the way for the disease in many cases. The most important factor in the spread of the disease among children is the presence of the consumptive parent in the home. Direct infection from parent to child can only too commonly be traced. In a family where one parent had a well-marked case of tuberculosis examination showed four out of five children had consumption. No adequate provision has yet been made to place such children in good environment that they may regain their health. The work of removing the infected member of the family is being well worked out, but until we can care for all ignorant and careless consumptives, our problem in regard to children will continue to be a large one. Much can be done through isolation, education and cleanliness. A considerable number of children have been under observation in day camps and in the country. The results

have exceeded expectations. Not only has the general improvement been rapid, but a number of active lesions have become quiescent after a few weeks' treatment. It would seem that the child at its receptive age is peculiarly open to ideas in regard to hygienic living and the recuperative power of the body at this stage in development makes the opportunity and results of treatment of great promise. In order to protect children better several measures are important. These are: Early notification of all births; better inspection and control of the milk supplies of cities; systematic school inspection; housing reform; segregation of advanced cases; required notification of the disease; provision for the care of pulmonary tuberculosis in children; education of all school children on matters of general hygiene. Nearly all these measures are being enforced in Massachusetts, and as the forces, sanitation and education, advance, the solution of the problem of tuberculosis is nearer.

Obstructive Abnormalities of the Ora-Nasopharyngeal Spaces in Children, a Powerful Predisposing Factor to Tuberculosis.

DR. JOHN J. CRONIN, New York: The high percentage of deformities of the nose, throat and pharyngeal spaces found among children from tuberculous homes indicates that whatever may be the reason of the abnormal development of embryonal lymphoid tissue, the presence of the enlarged tissues in vital cavities predisposes the child thus affected to a lessened resistance against the constant exposure to tuberculosis. The conjunctival reaction, in the few cases tested, shows that there is a much higher percentage of positive reaction in those children with hypertrophied lymphoid tissue than in those in whom the tissue is associated almost universally with defect of the organs of the oral cavity; an unhygienic condition of the mouth and lack of development of the dental arches. The association of these defects is manifested in the general nutrition and development of the individual in that the anthropometric comparison show them to be substantiated. In the very few instances found where there was little or no hypertrophy of lymphoid tissue, there was a negative conjunctival reaction. Specimens of tonsils and adenoids were removed from children who showed no pulmonary abnormal condition and sent to the Research Laboratory, Department of Health, New York City, for injection into guinea pigs, provided the ocular tuberculin reaction were positive. Six such specimens were referred. Two showed tuberculosis in pig on autopsy. One boy subsequently developed pulmonary disease. If, therefore, nutritional and developmental growth is hindered by lymphoid structures obstructing vital spaces, and these same hypertrophied tissues offer a favorable nidus for growth and ingress of tubercle bacillus to the system, whereas the development of the child is enhanced after removal of these obstructions, should not some laws be enacted that children be relieved of remediable obstruction before entering school and some means be adopted to care for the children of tuberculous after treatment is had, that children may not be subject to constant exposure to the disease? Would it not be more economic for the municipality to care for needy tuberculous homes than allow and favor the spread of tuberculosis?

Human Contagion as a Factor in Infantile Tuberculosis.

DR. JULES COMBY, Paris: Tuberculosis is not hereditary. The transmission of Koch's bacillus from the mother to the fetus by way of the placenta is exceptional. The soil is not inherited any more than the seed. There is no doubt that tuberculous parents transmit the disease to their children, but if they do, it is through contagion. Family contagion explains almost all cases of infantile tuberculosis. Transmission through the milk or flesh of tuberculous cows plays an insignificant part in the transmission of the disease to the human species. The infant can be fully protected against this danger by a proper selection of cows and sterilization of the milk. My investigations have shown that tuberculous children are found only in families in which there are tuberculous members, regardless of the kind of milk consumed. On the other hand, I constantly find on postmortem examinations tuberculosis of the peribronchial glands, which therefore represent the aërial port of entry of the bacillus of Koch. Among 1,432 autopsies on children from the hospitals of Paris during fourteen years I found 529 tuberculous subjects, or about 37 per cent. Among 216 infants from 0 to 3 months, 4 tuberculous, or less than 2 per cent.; of 1,008 from 0 to 2 years, 252 tuberculous, or about 25 per cent. After the second year the proportion of tuberculous cadavers attains 45, 50, 60 and 65 per cent. All this is fully explained by human contagion. I think that prophylaxis should occupy itself with tuberculous human beings and not with cows.

Placental Transmission of Tuberculosis.

DR. ALFRED SCOTT WARTHIN, Ann Arbor, Mich.: Congenital tuberculosis is ordinarily regarded as extremely rare. The most common forms of tuberculosis of the placenta are the decidual and intervillous. Since tubercle bacilli may pass the placenta without causing local lesions, the absence of the latter does not signify that the fetus has escaped infection. In the case of placental lesions the chances are infinitely greater that bacilli may gain entrance into the fetal circulation. In the fetal blood stream they may be present in great numbers without exciting local lesions. The occurrence of latent infections of the new-born is probable. The occurrence of pregnancy in a tuberculous woman favors the entrance of tubercle bacilli into the blood stream and then into the placental sinuses. The placenta is not a perfect filter for micro-organisms. It has no especial immunity against the tubercle bacillus. Congenital tuberculosis as the result of placental transmission is a definite factor in the etiology of tuberculosis and can not be dismissed with its mere recognition as a very rare possibility. While, of course, relatively rare, it is more common than is supposed, and must be borne in mind as a definite possibility in all cases in which the questions of marriage and pregnancy of tuberculous women come up for consideration.

Case of Miliary Tuberculosis in a Child Aged Four and a Half Months—Report of Autopsy.

DRS. A. L. KOTZ and E. M. GREEN, Easton, Pa.: The patient, a female child, born December, 1907, at the age of two weeks was fed on cow's milk and at the age of four weeks was given certified milk modified. She gained steadily until 12 weeks old, then gradually lost flesh; temperature averaged 99.4 F.; abdomen was much distended. The child died when four and a half months old. Lungs contained two small nodules only; one or two mediastinal glands were involved. The peritoneal cavity was completely obliterated, and the intestines firmly glued together. The tuberculous foci consisted of a mass of tubercles fused into flat yellowish mass size of lentil. In the pancreas these masses were numerous, completely disorganizing the organ. In the intestines the tubercles were entirely confined to the serous and subserous coats and these were completely packed with tuberculous deposits. The muscular layers and mucosa were atrophied with small-celled infiltration. The tuberculous masses consisted of lymphoid and epithelioid cells surrounding small foci of coagulation necrosis, giant cells rare. The tubercle bacillus was most abundant in the epithelioid layer and on the outer surface of the necrotic foci. They were almost absent in the necrotic tissue and near the giant cells. Most of the bacilli were shorter, thicker and less beaded than the ordinary bacilli found in human tissue. Investigation showed that the farm from which the first milk was obtained (although carefully managed and thoroughly inspected) had one or two infected cows. They were highly bred Jersey cattle. The certified milk came from ordinary healthy inspected cattle among which no infected cows were discovered. The child was evidently infected during the third and fourth weeks of life and so violently that death occurred three months later.

Clinical Manifestations of Tuberculous Meningitis.

DR. D. J. MCCARTHY, Philadelphia, considered the following types of atypical cases: Irregular fleeting palsies, especially of the eye muscles, blindness and dilatation of the pupils from internal hydrocephalus; stupor and delirium help to

distinguish this type. Speaking of minor tuberculosis and of septic infection, cranial nerve involvement is very limited, but the pulse rate is apt to be high. Localized tuberculous meningitis is to be distinguished by the localizing symptom in a case of pulmonary tuberculosis. The productive and healing types show pathologic small tubercles with a spindle-shaped type of cell. Cases associated with traumatism are of considerable medicolegal importance. The principal purpose of the paper is to call attention to the fact that the source of infection must be discovered and laboratory diagnosis be considered as of secondary value.

Primary Localization of Tuberculosis in Children.

DR. WOODS HUTCHINSON, New York: The data so far collected appear to point toward the following conclusions as probable: First, the frequency of pulmonary tuberculosis in children is much greater than was formerly supposed. Second, the lung is the most frequent site of tuberculous involvement in children, as in adults. Third, whatever the port of entry, the lung suffers most severely and most frequently. Fourth, instead of tuberculosis having a special preference for the bones, joints and glands in childhood, the tuberculous process in these regions and tissues would appear to be secondary to the involvements of the lung and to represent a residual stage of a generalized infection. Fifth, it would appear probable that even the glandular forms of tuberculosis do not represent an earlier or milder form of the infection, but are secondary to a pulmonary involvement. Sixth, the moderate but appreciable degree of immunity against pulmonary tuberculosis possessed by children who have manifested osseous, articular or glandular forms of the disease is possibly to be interpreted on the theory that they have already survived a considerable degree of pulmonary involvement. Seventh, such immunity as may be acquired by civilized races is probably like the immunity of the negro races to malaria—the result of the survival of attacks of the pulmonary form of the disease in childhood. Lastly, the field in which the decisive battle of the future campaign against tuberculosis must be fought is the home; the chief enemy, infection in early childhood; the heaviest gun and most crying need, camps, "preventoria," for the reception and cure of infected or exposed children before they have become unmistakably tuberculous.

Distribution of Tuberculous Lesions in Infants and Young Children; a Study Based on Postmortem Examinations.

DR. MARTHA WOLLSTEIN, New York: Among 1,131 autopsies on children under 4 years old, 185 showed tuberculosis. Whereas 78 per cent. of all autopsies performed were on infants less than one year old, tuberculosis affected 12 per cent. at that age. During the second year of life 33 per cent. of all who came to autopsy had tuberculosis, and of those older than 2 years 34 per cent. Four children were less than 3 months old, the youngest being 7 weeks. No case of congenital tuberculosis occurred. In one instance the only tuberculous lesion was found in the bronchial glands; in four the lungs alone were involved and in 13 the lungs and bronchial glands. There were 7 cases of primary infection of the digestive tract, including 2 of mixed deglutition and respiratory origin. Of the more advanced and generalized cases only 2 gave evidence of probable intestinal origin, while 40 began in the respiratory tract. In the majority of extensively generalized cases of tuberculosis in young children the exact point of entrance must remain in doubt. Although the lungs are involved more frequently than any other organ, this proves their marked predisposition to tuberculosis rather than their primary infection. Nevertheless, cases of respiratory origin predominate over those of ingestion.

Relative Frequency of Abdominal Tuberculosis in Great Britain and the United States.

DR. DAVID BOVAIRD, JR., New York: 1. In the course of an investigation of the data regarding tuberculosis in children in various countries, in 1901, I showed that there was a remarkable discrepancy between the figures for primary intestinal tuberculosis in Great Britain and the United States. 2. That that difference is real and not due to any difference in interpretation of findings is borne out by the clinical data regarding abdominal tuberculosis in children in these countries. 3. The term abdominal tuberculosis as here used is meant to include tuberculosis of the intestines, mesenteric nodes and peritoneum. 4. Data from the hospitals of Edinburgh, Glasgow and London, compared with those from the hospitals of New York and Boston, show: *a*. That tuberculosis (all forms) is much less frequent in the United States than in Great Britain. *b*. That, taking this fact into consideration, there is still a marked contrast in the data regarding abdominal tuberculosis, showing it to be much more frequent in Great Britain than in the United States. 5. The contrast is sufficiently great to show that some special conditions must be present determining the unusual frequency of abdominal tuberculosis in Great Britain. 6. Abdominal tuberculosis may fairly be assumed to represent in general the frequency of primary intestinal or alimentary tuberculous infections. 7. The suggestion at once arises that the prevalence of abdominal tuberculosis in Great Britain is due to a corresponding preponderance of tuberculosis in cattle. 8. No such preponderance shown by data regarding bovine tuberculosis. 9. Further study of the data regarding abdominal tuberculosis shows this affection, in this country, at least, not to be common in infancy (first and second years), when cow's milk is most used as food, but to belong to the later periods of life.

Tuberculosis of the Pericardium in Children.

DR. JOSEPH S. WALL, Washington: The occurrence of a group of cases of marked influence in the production of clinical symptoms, warrants the consideration of tuberculous pericarditis as a distinct morbid entity. This term may be used in such cases, while to other cases, characterized by their latency, which occur as an incident in tuberculous disease, may be applied the designation tuberculosis of the pericardium. The distinction, however, is but one of degree. The infectious diseases of childhood have an etiologic influence which is extremely suggestive, and such influence is to be attributed largely to the adenopathy of the mediastinal glands which follows in their wake. As a direct causative factor tuberculosis of the tracheobronchial and peribronchial glands stands foremost with extension of the disease to the pericardium by continuity and contiguity. The process may be plastic; it may be associated with small or extensive exudates, which are frequently hemorrhagic, or, as a final outcome, symphysis of the leaflets may occur.

Intermittent Albuminuria of Childhood Considered in its Relation to Hereditary Tuberculosis.

DR. J. TEISSIER, of Lyons, France: Hereditary tuberculosis may attack the kidney in the child or in the adult in one of two ways: 1. Certain individuals present a more or less abundant albuminuria, which is preferably intermittent, and which may affect one of the well-known classic cycles; but it disappears as the pulmonary localization becomes established, or gives rise to general lesions, and may, therefore, be termed pretuberculous albuminuria. This form of albuminuria does not necessarily imply the existence of renal tuberculosis; but, on the contrary, seems to have a toxic origin, and resembles the bacteriolysis which is an expression of the spontaneous defensive forces of the organism. As soon as this spontaneous destruction ceases, tuberculosis develops and the albuminuria comes to an end. 2. There is a third series of cases which are more numerous. The kidney is affected in a peculiar manner, which we have been able to determine almost with certainty: the kidney reacts very slowly and sluggishly to the action of the tuberculous toxin transmitted by the parent, and a slight degree of latent nephritis is produced, which results in a relative impermeability, manifesting itself in a moderate diminution of the total molecular diuresis, an increase in the coefficient of Korany, and also in a slight elevation of the blood pressure; a moderately severe albuminuria, usually intermittent; either of the mat inal (morning) type, or frankly orthostatic (present during

the active hours of the day); and finally—as the hall mark of its tuberculous origin—a well-defined d'Arloing-Courmont serum reaction, often exceeding one fifteenth. These cases, which make up more than 34 per cent. of the statistics of intermittent albuminuria in young individuals, do not eventuate in actual tuberculosis. For this reason they seem to justify the term paratuberculous albuminuria, and many of these cases belong to the category of spontaneous immunization, to which Courmont has recently called attention.

THE EXHIBITS.

Since the opening of the congress the exhibition hall has been thronged with an incessant stream of visitors, who have not failed to take advantage of its great public educational features. While too much praise can not be given to those who have expended untiring energy in order to demonstrate the position of the United States in this crusade of nations against a common foe, it is a matter of regret that the magnitude of the movement in this country is apt to be underestimated on account of the failure of some of the states to participate in the exhibition. This inaction in most instances is due to legislative negligence. It is expected that the influence of the congress will stimulate and arouse action throughout the entire country.

As an educational feature, the exhibits are an unqualified success. They have been in charge of experts who, at stated intervals during the congress, have given personal demonstrations of their respective exhibits, occasionally supplementing them with stereopticon lectures. In order that the lessons of the congress may not be forgotten, the United States Public Health and Marine-Hospital Service contemplates the preparation of a series of lantern slides to be taken from photographs of the most instructive features of the exhibits. It is intended to place these slides at the disposal of boards of health and others on application to the service.

In order to furnish more adequate information relative to the scope of the congress, we add the following notes to supplement the brief account given in THE JOURNAL, September 26, p. 1090.

Description of State Exhibits.

California.—This exhibit consists of plans and models of the Pettenger and Barlow sanatoria and a few mortality records.

Colorado.—The general exhibit of Colorado consists in a relief map of the state covering 186 feet, and wall maps showing climatic statistics. Special exhibits of plans and models are contributed by Cragmore Sanatorium, Modern Woodmen Sanatorium, Union Printers' Home, Agnes Memorial Sanatorium and others.

Connecticut.—This exhibit comprises data furnished by the state and local boards of health, numerous charitable organizations and hospitals.

Illinois.—The Illinois State Board of Health shows its pamphlet on tuberculosis. Conspicuously placed is a joint statement by the president and secretary of the board that on account of the failure of the general assembly to appropriate funds the board is unable to make a representative exhibit. The statement gives a summary of the campaign of public education in Illinois. The Chicago Department of Health contributes maps and mortality records. There are exhibits from Cook County Hospital, the Ottawa Tent Colony and others.

Iowa.—The Iowa exhibit shows pathologic specimens and the manner of conducting the educational campaign in that state.

Maine.—This state contributes an excellent series of placards. The board of health submits maps and photographs. There are models and apparatus contributed by the Maine Sanatorium and the Association for the Study of Tuberculosis.

Maryland.—The Maryland State Board of Health presents statistics and charts. There are instructive exhibits from the various hospitals and organizations. Pathologic specimens are contributed by Johns Hopkins Medical School, University of Maryland, College of Physicians and Surgeons and the Baltimore Medical College.

Massachusetts. This state displays a series of photographs showing avoidable and unavoidable sanitary conditions associated with some of the occupations that are regarded as being conducive to tuberculosis. The photographs illustrate the cotton industry, the boot and shoe industry, horn and celluloid, pearl button making, etc. There are many models and exhibits of hospitals and organizations. Boston University has a magnificent collection of pathologic specimens of human and bovine tuberculosis. The collection is mounted in gelatin, according to the method devised by Dr. Waters of the university.

Michigan.—The Michigan State Board of Health shows charts and literature detailing the Michigan system of registration of tuberculous patients. There is an exhibit by the University of Michigan on the pathology of the placental transmission of tuberculosis. Local health boards and organizations are represented in the exhibit.

Minnesota.—This state shows architectural drawings, photographs of camps and hospitals, literature issued by the state and local boards of health, charts and statistics.

New Jersey.—This state is represented by charts and diagrams exhibited by the Prudential Life Insurance Company.

New York.—This exhibit is very complete and is made up of three sections, two of which are devoted to New York City. The work of the committee on the prevention of tuberculosis in that city deserves special mention. The permanent traveling exhibition of this committee is divided into five main classes: (1) Where tuberculosis breeds; (2) where tuberculosis spreads; (3) the extent of the disease; (4) how tuberculosis is cured; (5) how tuberculosis is prevented. The exhibition is intended for popular use in educating the community. Under each class are shown suitable models, wall charts and pictures and photographs that can be understood by the people. The Department of Health of New York City shows statistics and maps, the system of registration and sanitary supervision of tuberculosis. The tuberculosis clinics, hospitals and dispensaries give large exhibits. The New York State Department of Health shows charts and literature relating to the administration and legal phases of tuberculosis work and shows in its exhibit an ideal method of conducting the campaign. The banners, posters and lantern slides are calculated to impress on the working classes the dangers of tuberculosis and the means of its prevention. One of the features of the state exhibit is a series of phonograph lectures on the subject. There are many special exhibits from hospitals, sanatoria and local health boards. Prominent among the exhibitors are the Playground Association of America, the Straus milk exhibit, and the International Children's School Farm League.

Ohio.—Pictures, charts and models of hospitals and camps, together with a number of exhibits from the local boards of health and other organizations, comprise this display.

Rhode Island.—This state shows literature and methods in dealing with the subject. Models, photographs and plans of the state sanatorium are shown, together with a series of medical charts and specimens of work done by patients of the institution.

Pennsylvania.—The Pennsylvania State Department of Health shows the result of ample appropriations by the legislature. At the biennial sessions of the legislature in 1907 the sum of $1,470,000 was appropriated for tuberculosis work. The exhibit illustrates the general plan of the work under the following heads: (1) The collection and tabulation of statistics relating to tuberculosis, through reports of each case. (2) The establishment of one or more sanatoria for the treatment of incipient cases, including infirmaries for advanced and hopeless cases. (3) The establishment of dispensaries in each county of the state for the care of cases which can not avail themselves of sanatorium treatment, including home visitations and the study of occupational conditions. (4) The maintenance of pathologic laboratories for the free examination of sputum and tuberculous lesions, and biologic laboratories for the possible development of immunitive and curative products. (5) The restriction of tuberculosis by disinfection, etc. (6) The dissemination of knowl-

edge relative to the disease. Ample space is given to the exhibits of organized societies and hospitals. The Henry Phipps Institute shows a large and complete pathologic exhibit.

Wisconsin.—This exhibit consists of maps, charts and diagrams illustrating the work done in that state. The University of Wisconsin has on view a traveling exhibit prepared by the departments of bacteriology and hygiene and home economics.

Arkansas, Kentucky, Missouri, North and South Carolina, Texas and Virginia have small exhibits.

(The report of the proceedings of the sections will be continued next week.)

Medicolegal

What Constitutes "Illness" and Consultation of Physician—Waiver of Privilege.

The Supreme Court of Kansas says, in Metropolitan Life Insurance Co. vs. Baker, where one of the questions asked an applicant for life insurance was: "Give full particulars of any illness you may have had since childhood, and name of medical attendant or attendants," that it was true that the word "illness," as used in such question, was open to interpretation. No man ought to give lasting regard to all his little ailments, bruises, aches and pains. He can not fix them in memory if he would. They do not affect the risk in life insurance, and the insuring company cares nothing about them. Therefore, illness clearly means something more than a temporary indisposition, slight and trivial in its nature, and which does not really affect the soundness of the system, substantially impair the health, materially weaken the vigor of the constitution, or seriously derange the vital functions.

It is also true that consultation with a physician implies more than a casual meeting with one, and a passing remark in reference to some bodily state or condition. Incidental conversations of this character are not kept in mind, and are inconsequential, when considered in relation to a life insurance risk.

But if a man, from motives of his, has sought and obtained an interview with a physician regarding the state of his health, the fact of a consultation with the physician does not depend on the gravity of the subject of the interview. A man may believe that he is in sound health, but he desires an expert opinion on the subject. He may think he detects certain disturbances of his normal condition, which apparently are not serious, but he desires to know what those disturbances indicate. He goes to a physician, tells his story, answers questions, submits to an examination, receives advice, perhaps is given medicine, or other treatment, perhaps is assured there is nothing the matter with him, and is sent away without more. He has consulted a physician, whether he was sick or well. The man may have been foolish to consult one. Bread pills may have been an efficacious remedy for him, or he may have been stricken with a fatal disease. The fact of the consultation remains and can not be negatived by any showing whatever relating to the true state of his health.

Very often men, who are not strictly honest, seek insurance on their lives, and a life insurance company may properly be allowed to take full precautions against deathbed insurance. It is entirely reasonable that such a company should ask an applicant for insurance if he has consulted a physician. The question is simple and unambiguous. It is not like questions relating to illness, which may call for the opinion and judgment of the applicant on a debatable matter hard to decide. It involves nothing which the applicant can not answer categorically out of his own personal knowledge. It relates to a fact which may be recollected, as well as an illness. The question is important, because, if an affirmative answer be given, the company may make an investigation and ascertain the exact truth regarding the cause for the consultation and the state of health it revealed or ought to have revealed. It requires no argument to show that the action of the company may well be influenced by the answer to this question. Taking, therefore, even a narrow view of the right of the insurer to exercise its own judgment and stipulate as to what is material, it is entirely fair that the truthfulness of such answer should be made the subject of a warranty.

The plaintiff cited some cases from Vermont and elsewhere holding contrary to these views. They can not be approved. Nor is the court disposed to distinguish between the literal truth and the truth, unqualified, of an answer, which must be "Yes" or "No."

So the court holds that if an applicant for life insurance warrant the truthfulness of his answer to the question, "Have you consulted any other physician?" and agree that the policy issued in consideration of the warranty shall be void if the answer be false, the liability of the insurer depends on the truthfulness of the answer. An applicant who from motives of his own has sought and obtained a professional interview with a physician regarding the state of his health can not truthfully answer the question referred to in the negative merely because the interview concerned some temporary ailment or indisposition, slight in character and not seriously affecting health. The fact of a consultation with a physician does not depend on the gravity of the subject of the interview.

The court also holds that an applicant for life insurance may make a valid contract with the insurer, waiving the privilege afforded him by Section 323 of the Kansas Code of Civil Procedure, which renders a physician incompetent to testify to professional communications from his patient and knowledge of his patient obtained in a professional way.

The statute contemplates that the patient may consent to the physician's testifying. Therefore, no question of public policy is involved. The public policy of the state does not depend on the will of individuals who are free to act as circumstances may suggest to them. It is elementary law that communications, made in professional confidence, are not incompetent. If a third person hear them he may testify. The disqualification is imposed on the lawyer, physician or priest only, and not for his benefit or for the benefit of the public, but merely as a privilege to the client, patient or person confessing. This privilege, like many others, even those protected by constitutional guaranty, may be waived. By statute, if the party himself testify, the privilege is waived. If he publish the confidential matter to the world, the privilege is waived. And it would deprive him of a valuable right if he were prohibited from making a waiver by contract in advance of litigation.

Damages for Injury to Bad Leg.

The Supreme Court of Missouri, Division No. 1, says that the plaintiff's injuries in the personal injury case of Peterson vs. Metropolitan Street Railway Company were permanent and serious. There was a fracture of the right femur at its neck, technically called an "impacted fracture," the broken bone being driven into the upper piece at the hip joint and held firmly. He was bedridden for a long time and suffered much. His right leg was shortened. His right foot was everted. The hurt leg being weakened, and its use impaired, the result was a halting and crippled walk. There was testimony that his right leg had been a bad leg for eighteen or twenty years prior to the accident. Below the knee it was afflicted with varicose veins, and indolent, chronic sores and ulcers, at spells swelling and suppurating, and this condition continued after the injury. But the proof did not show, nor did counsel argue that the leg, bad as it was, did not fill a useful and necessary office to Mr. Peterson. Clearly, the defendant had no right to negligently break the neck of the thigh bone of a bad leg any more than of a good leg. A leg might be so very bad that to break the bone of it would cause little damage, but here, considering the permanency of the injury in resulting deformity and weakness and pain of body and anguish of mind following and attending the injury, the court is of opinion that, if the defendant was responsible therefor, and that responsibility was determined by a fair trial, a verdict of $5,000 was little enough

Current Medical Literature

AMERICAN.

Titles marked with an asterik (*) are abstracted below.

New York Medical Journal.

October 3.

1 *Irremovable Cancer. W. S. Bainbridge, New York.
2 *International Classification—Its Advantages, Defects and Deficiencies. C. L. Wilbur, Washington, D. C.
3 *Psychologic Tests Made on Tuberculosis Patients. W. S. Mills, New York.
4 After-Treatment in a Series of Forty-four Laparotomies. R. F. Woods, Philadelphia.
5 Apoplexy, Its Causes and Treatment. J. D. Bonnar, Buffalo, N. Y.
6 Repair of the Perineum. J. W. Henson, Richmond, Va.
7 Apoplexy in the Classification of Diseases. E. P. Foster, New York.

1. **Irremovable Cancer.**—Bainbridge classifies cases of irremovable cancer under the following heads: 1, Seemingly irremovable; 2, operable but irremovable, and yet curable; 3, operable, but irremovable and incurable; and 4, inoperable, irremovable, and incurable. Cancer may be seemingly irremovable on account of the patient's condition in other respects than as regards cancer; or concurrent complications in the neighborhood of the cancer may lead to the diagnosis of irremovable malignancy. Again, cases are sometimes consigned to the inoperable and hopeless class because the risk to the patient from operative procedure seems too great to incur on account of the extensive involvement and of the patient's lowered vitality. In the second class, the author points out that notwithstanding the difficulty of fixing a time limit on recurrence, early operation is called for, for it would be foolish to fold our hands and wait patiently for a cancer to disappear spontaneously, as it is said to do in 30 per cent. of mouse cancers. Again, in some cases, though it is impossible to remove the entire growth, we may remove as much as possible and institute other measures, such as Dawbarn's starvation method by tying the supplying arteries, or Wyeth's method of injecting boiling water or paraffin, etc. In the third class he discusses the management of cases with regard to the general treatment of the patient, the treatment of the indirect condition caused by cancer, the tying of blood vessels in the carotid region or in the pelvis, and other measures which may be adopted in certain cases with appreciable benefit. Among these he discusses the *x*-ray, which he states is a valuable adjuvant; the high-frequency current, which has some beneficial influence on the patient; fulguration, which is limited to external cancer; leucodescent light; radium, which in his hands has not proved satisfactory; the mixed toxins of *Bacillus prodigiosus* and *Streptococcus erysipelatis*—Coley's fluid—the use of which should be limited to certain types of sarcoma and to inoperable cases; and the toxins of *Streptococcus pyogenes*. He refers to oöphorectomy, and also to the use of pancreatic enzymes, which have been tried for many months at the New York Skin and Cancer Hospital, the question being still *sub judice*. A full report of two years' experience with the treatment will soon be published. In inoperable, irremovable, and incurable cancers, attention is chiefly directed to lessening pain, fetor and discharge. For pain, morphin, acetphenetidin, antipyrin and acetanilid may be mentioned. The depressing effects of the coal-tar products should be modified by stimulants. Alcohol in moderation with food may be useful. The fungating masses should be kept clean by frequent dressing. The galvanocautery, zinc chlorid paste and pancreatic lotion applied locally will help to keep the surfaces clean and to lessen fetor. It must not be forgotten, however, that while pastes and even pancreatic lotions may smooth off the surfaces, they may at the same time erode blood vessels and thus give rise to severe and perhaps fatal hemorrhage. Adrenalin chlorid is also useful. Terchlorid of antimony will help to check hemorrhage and lessen fetor in advanced uterine cancer after the vessels have been tied off and as much of the disease removed as possible.

2. **The International Classification of Diseases.**—Wilbur refers to the history of the International Classification of Diseases and Causes of Death, proposed by Bertillon, of Paris, adopted at the meeting of the American Public Health Association, at Ottawa in 1898, and endorsed by the American Medical Association, at Chicago, June, 1908. The date of the next decennial revision has been advanced from 1910 to next year (1909). Wilbur discusses the advantages of the international classification, its defects and deficiencies, and makes some general criticisms and recommendations. Incidentally, he cautions against confounding the international classification with a nomenclature of diseases, such as that drawn up by the Royal College of Physicians of London, which he wishes was in general use among physicians in the United States.

3. **The Psychology of Tuberculosis Patients.**—Mills records the results of a series of psychologic tests on 29 patients with tuberculosis. The tests used were those of perception of size, the esthesiometer, of visual memory, steadiness of movement, accuracy of movement, speed of movement, the dynamometer, the association test, and a test of retrospective memory. He draws the following conclusions: The tests seemed to show that previous mental training had much more to do with the results than did the physical condition. This was especially true as to the length of time consumed in performing each test. The patients were all intelligent enough to do what was expected of them, but it was entirely out of their accustomed routine, and hence they worked slowly. Performing the various tests was a distinct effort for most of them. The work started perspiration, and all left the examining room much exhausted. In all, the average of accuracy, sensibility and strength was lower than for healthy persons. The patients were sick physically, most of them had had little education, and the results showed the detrimental influence of both.

Medical Record, New York.

October 3.

8 *Serum Treatment and Prognosis, Under Various Forms of Therapy, of Cerebrospinal Fever. H. Koplik, New York.
9 Mistakes Which May Prevent the Best Results of the Uric Acid-Free Diet. A. Haig, London.
10 *Pneumonia on the Isthmus of Panama. W. E. Deeks, Panama.
11 Differentiation of Early Tuberculosis and Malaria. F. H. Ringer, Asheville, N. C.
12 Acute Otitis Interna. E. B. Stillman, Troy, N. Y.
13 Gonorrheal Exostoses of the Os Calcis. A. J. Davidson, Philadelphia.

8. **Cerebrospinal Fever.**—Koplik discusses the differences between sporadic and epidemic cerebrospinal fever. The sporadic cases are often so mild that the intermittent or remittent febrile symptoms, headache, and drowsiness, are the only ones that lead to a thought of cerebrospinal fever. The rigidity, the hyperesthesia, Kernig reaction, herpes, delirium, and gradually increasing hydrocephalus, as evidenced by the so-called Macewen sign, are usually present, but we rarely encounter the severer symptoms of the disease—sudden and abrupt unconsciousness, petechiæ, or diffuse hemorrhages, and paralysis. Cerebrospinal meningitis of a meningococcic type resembles pneumonia as seen in adults in the sporadic and epidemic form. Koplik gives a picture of the natural history and prognosis of cerebrospinal meningitis based on the records of patients treated since 1889 up to the epidemic years of 1904 and 1905. He discusses the treatment by simple lumbar puncture, and from that passes on to the serum treatment, describing briefly his method of giving the serum to the patient. A necessary indication is that the patient shall show symptoms of pressure and indications of cerebrospinal fluid. There must be not only delirium and sopor, but distinct signs of increase of fluid in the ventricles of the brain, as shown by percussion of the skull. When the Macewen percussion note, however slight, is obtained in a patient with symptoms of cerebrospinal meningitis, Koplik proceeds to puncture, strictly according to Quincke's injunctions, in the middle line in children and adolescents. Fluid is withdrawn till it is judged that the pressure in the rachidian space is approximately normal. The serum is then introduced, not with a syringe, but with a small glass funnel, capable of holding about 20 c.c. The puncture is repeated if the symptoms do not abate or the hydrocephalus persists or returns. Koplik has 13 patients thus far treated with the serum, 2 of whom are under observation, 2 have died, and the remainder, with the exception of one who was discharged improved, have recovered. He considers it unfair to draw conclusions as yet,

but the serum of Flexner not only makes a favorable impression, but is certainly a factor which can not be excluded from the therapy of cerebrospinal meningitis.

10. **Pneumonia at Panama.** Deeks states that the mixed races showed poor resisting power in pneumonia. He discusses the characteristics of the disease as it showed itself on the Isthmus, and also the pathologic findings. In regard to treatment he points out particularly the misuse of quinin. In a district where malarial infection is almost universal, it is but natural to assume that quinin would be a *sine qua non* in the treatment of pneumonia patients. The direct opposite has been found to be the case. Its action is cumulative, depressing to the nerve centers and to the respiratory and circulating organs. It interferes with the development of leucocytosis by preventing the emigration of leucocytes from the blood, reduces the ozonizing powers of the erythrocytes and interferes with the elimination of waste products. From this he concludes that quinin in large doses in pneumonia is contraindicated. The treatment practiced in Panama was supportive and eliminative, and its results were satisfactory.

Boston Medical and Surgical Journal.

October 1.

14 *Acute Appendicitis in Children. B. Vincent, Boston.
15 *Mechanical Treatment of Diseases of the Circulatory System with Special Consideration of the Zander Methods. C. H. Bucholz, Boston.
16 Final Report on a Case of Adams-Stokes' Disease. H. F. Vickery, Boston.
17 *Measles *in utero*. N. R. Mason, Boston.

14. **Appendicitis in Children.** Vincent summarizes her paper as follows: Acute appendicitis is rare in infancy, but is more common in childhood than is generally supposed. An early diagnosis is difficult, and the first stages and lighter forms of the attack may be easily overlooked. The prognosis of the disease is more rapid in children than in adults; the involvement of the peritoneum and the appearance of pus are early features; diffuse peritonitis is probably more frequent, but there is still greater tendency to the formation of a localized abscess. A child is never so young and seldom so sick as to contraindicate surgical interference, but the extent of the operation must always be measured by the condition of each patient. Children stand short operations well, but may be needlessly lost through prolonged and ill-advised efforts to do more than is absolutely essential. The prognosis is more uncertain in children than in adults. Age is an important factor. In children over 10 years of age the prognosis is at least as good as in adults; in children under 5 it is worse, while in infants the prognosis is exceedingly grave.

15. **The Zander Method.** Bucholz emphasizes the use of physical exercise in the treatment of internal diseases and points out that when Zander constructed his apparatus forty years ago he had in view the influencing of internal diseases—those of the circulatory system, as well as those of the locomotor system. Bucholz discusses the physiology of the effect of mechanical therapeutic methods on the blood pressure and velocity of the blood current. Ordinarily we can not remove the causes of various diseases of the circulatory system, but we can make the conditions for their functioning as favorable as possible. The two fundamental factors for this are rest and exercise; rest to prevent overuse of the organ, exercise to fit it to perform its work better. For instance, in treating a disturbance of cardiac compensation we apply rest to the heart by ordering rest in bed, withdrawals of fluids, etc. At the same time by giving digitalis, which augments the pulse volume of the heart and reduces the frequency of the beat, we give the organ exercise. Bucholz gives the outlines of the Zander apparatus and the method of their use.

17. **Measles in Utero.** Mason describes a case in which a mother with typical measles gave birth to a child, delivery occurring during the period of desquamation. The infant showed a pigmentation all over the body and unmistakable desquamation. Mason asks whether the infant had measles or whether it was the normal desquamation of the new-born. He collates the literature on the subject of measles in the new born.

Lancet-Clinic, Cincinnati.

September 26.

18 Dante: Physician (continued). A. G. Drury, Cincinnati.
19 Differential Diagnosis of Gallstones. C. W. Manss, Cincinnati.
20 Bismuth-Vaselin Paste Injections. H. H. Hines, Cincinnati.
21 Diarrhea. G. H. Jones, Toledo, Ohio.

Virginia Medical Semi-Monthly, Richmond.

September 11.

22 *The Voice as Affected by General Conditions. W. A. Wells, Washington, D. C.
23 Artificial Feeding of Infants. G. A. Stover, South Boston, Va.
24 Treatment of Summer Diarrhea in Infants. M. Newton, Richmond.
25 Plea for More Exact Therapy. A. F. Kerr, Greensville, Va.
26 Ileus. R. L. Hillsman, Richmond.
27 Dermoid Cyst Removed Without Interrupting Pregnancy. W. A. Strother, Bedford City, Va.

22. **The Voice.** Wells discusses the voice as indicative of character, temperament, mood and the effect on it of age, environment, dress, occupation, strain, toxic agents, especially alcohol and tobacco, and the effects of various diseases, chlorosis, malaria, tuberculosis, syphilis and acute infectious diseases. He regards the voice of influenza as characteristic. He also considers the relation between the voice and the sexual organs. The voices of deaf people are considered, and it is stated that deaf people are unable to judge accurately the volume or intensity necessary to the occasion, some speaking habitually in too a low a tone and some unnecessarily loud. The diagnostic deduction is drawn, that those who speak loudly have trouble in the labyrinth and those who speak low in the middle ear.

Medical Fortnightly, St. Louis.

September 25.

28 What Does Disease Mean? H. Gasser, Platteville, Wis.
29 Sinorubin in the Bronchitis of Infants. J. Zahorsky, St. Louis.
30 Case of Probable Splenomegaly. T. D. Woodson, Richmond, Mo.

Annals of Surgery, Philadelphia.

September.

31 *Treatment of the Undescended or Maldescended Testis Associated with Inguinal Hernia. W. R. Coley, New York.
32 *Operation for Undescended Testicle. F. N. G. Starr, Toronto, Can.
33 *Radical Treatment of Carcinoma of the Bladder. A. A. Berg, New York.
34 Disturbances Due to Disease of the Verumontanum and Its Treatment with the Posterior Urethroscope. S. K. Swinburne, New York.
35 Fibrinous Calculi in the Kidney. H. Gage and H. W. Beal, Worcester, Mass.
36 *Hematuria as a Complicating Factor in Appendicitis. M. G. Seelig, St. Louis.
37 *Volkmann's Ischemic Paralysis. A. S. Taylor, New York.
38 *Recurrent Dislocation of the Ulnar Nerve. F. Cobb, Boston.
39 *Operative Treatment of Recent Fractures of the Femoral Shaft. T. W. Huntington, San Francisco.
40 *Reduction of Supracondyloid Fracture of Humerus. W. C. Lusk, New York.
41 Twenty-five Hundred Cases of Gas-Ether Anesthesia Without Complications. J. J. A. Van Kaathoven, Philadelphia.

31. **Undescended Testicle with Inguinal Hernia.** Coley, on the basis of a study of 128 personal operations in cases of undescended or maldescended testis associated with inguinal hernia, arrives at the following, among other conclusions:

1. The undescended testis is almost invariably of little or no functional value. It often gives rise to considerable pain and is more subject to inflammatory attacks than the normally descended organ, and possibly (though this is by no means proved), is more subject to malignant changes. 2. The undescended testis should never be sacrificed in children and very rarely in adults, it having been proved possible to effect a radical cure of hernia without the removal of the organ. In childhood, the testis, even if it never attains any functional value, is of value in developing the male characteristics of the child as well as in promoting his general health. In the adult, it should be retained for its influence on the mentality if for no other reason. 3. Operation should seldom be performed under the age of from 8 to 12 years unless the accompanying hernia demands such operative intervention, for the reason that in a considerable number of cases the testis, unless the defect be bilateral, descends spontaneously on the approach of puberty. Abdominal ectopia, unless double, is best left untreated, inasmuch as operation is difficult and by no means free from risk. 4. The main principles of any operation likely to yield satisfactory results must be: free open-

ing of the inguinal canal, which is secured by Bassini's incision; thorough freeing of the testis from any adhesions or peritoneal bands, even with the sacrifice of some of the veins if necessary; bringing the testicle into the scrotum; and suture of the canal without transplantation of the cord. The present tendency in favor of giving up all forms of suturing the testes, either to the scrotum, the other testis, or the thigh is, he believes, fully justified. Inasmuch as satisfactory results may be obtained without cutting away all the structures of the cord, except the vas and its vessels, this more radical step is very seldom indicated. 5. No case of double undescended testis should be allowed to persist till the age of puberty.

32. **Undescended Testicle.**—Starr describes the following operation, which he has devised and carried out successfully in cases in which the testicle is in the inguinal canal or outside the ring. An incision about one inch long is made over the external abdominal ring, the testicle is secured and brought out of the wound. The finger is carried down into the scrotum, and by blunt dissection the scrotal sac is stretched to make a suitable resting place for the testicle. The cord is then dissected free of its coverings, and if necessary to secure increased length, the cremasteric and spermatic arteries may be sacrificed, but the artery to the vas must not be interfered with. It is well to see that the testicle can be easily replaced into the pocket provided, without tension on the cord. It is again taken out and sutured by means of chromic catgut, No. 0, through the tunica albuginea to the loops of a piece of plaited silver wire, two or three inches long, as may be required. The wire ends are then pushed against the bottom of the scrotum and cut on to permit of their being pushed through. The free ends are then bent. To make assurance doubly sure, two horsehair sutures are passed up through the tiny opening in the scrotum from which the wire projects, one on each side of the wire shaft, to catch the tunica albuginea, are brought out again, and tied over the projecting wire ends. The loop of the wire shaft is then sutured by means of 10-day chromic catgut No. 1 to the periosteum over the os pubis. The testicle is then securely placed in the scrotum and is maintained there by means of a silver wire splint. The operation is completed by introducing through the skin, at one end of the incision, a horsehair suture which travels subcutaneously, taking up the spermatic fascia and divided cremasteric muscle over the cord. It is brought out again through the skin at the opposite end, carried over the top of a small roll of gauze, and continued along as an uninterrupted stitch, to bring the skin edges into apposition. The two free ends are tied over another small roll of gauze. The wound is carefully dressed with plenty of pads and a double spica applied. On the twelfth day the dressing is removed, and the cutaneous horsehair, snipped at one end, is then easily withdrawn. The two horsehair stitches are cut and removed, when the end of the wire is grasped with a pair of forceps and the wire splint removed.

33. **Carcinoma of the Bladder.**—Berg asks the following questions: 1. Is it possible to effect a lasting and permanent cure of a vesical carcinoma by a partial resection of its walls, or is it necessary in every case completely to excise the viscus? 2. In case partial resection is consistent with the requirements of a radical extirpation, how much bladder wall must be left in order to make a satisfactory urinary reservoir? He analyzes Rafin's published results of ninety-six partial cystectomies for carcinoma, and says that, in view of these reports, there can not be any doubt of the possibility of a radical cure by partial resection of the bladder. He further adds that on taking into consideration all the facts: first, that the freedom of recurrence after partial cystectomy is as great as that secured by complete extirpation; second, that the immediate operative mortality after partial cystectomy is not half so high as that after entire removal of the bladder; third, that the objections raised by Watson to ureteral implantation into the intestine, vagina or skin, do not apply to ureteral reimplantation into a remaining healthy portion of the bladder—he is forced to the conclusion that when we have to deal with growths limited to a third of the bladder, and especially when their site is on the fundus and lateral walls, partial cystectomy with reimplantation of the ureter into the remaining portion of the bladder when the ureteral orifice is involved in the disease is by far the operation of choice. It must not be inferred, however, that the total extirpation has no place in consideration of the radical cure of this disease, for when the cancer is diffusely spread over the greater part of the bladder, thus forbidding us to save a sufficient portion thereof to form a reservoir for the urine, or when there is a bad cystitis that does not yield immediately to therapeutic measures and which necessarily increases materially the dangers of ascending ureteral infection after reimplantation of the ureters, then complete extirpation is advisable, provided the patient is otherwise sound. The preliminary operation of lumbar nephrostomy would certainly seem to be indicated when complete excision is done. In reference to the second question, he says that one should be able to remove fully one-half of the bladder without materially interfering with the function of this organ, and that the removal of a third of the viscus does not have any appreciable effect on the function of the remaining portion. He discusses his technic for partial cystectomy as described by him in the *Annals of Surgery* in 1904.

36. **Hematuria Complicating Appendicitis.**—Seelig reports three cases, all encountered in a short period of time, and all characterized by the facts, first, that they were wrongly diagnosed by the operating surgeon; second, that pain radiating from the kidney region and blood in the urine were prominent symptoms; and third, that the lesion was in the appendix. He discusses the cases and suggests the following classification: Hematuria complicating appendicitis may be due to: 1. General systemic invasion resulting from acute appendicitis and affecting the kidney indirectly—so-called toxic nephritis. 2. Involvement directly of one or more of the organs of the urinary tract—(a) kidney, as in Case 2 of this paper; (b) ureter, as in Case 3 of this paper; (c) bladder, as in the cases recorded by Odde and Silhol, Lancien and Brun.

37. **Volkmann's Ischemic Paralysis.**—Taylor says that ischemic paralysis is essentially a myositis resulting from prolonged absence from the muscles of oxygenated blood. The nerves are frequently involved. It occurs commonly in the forearm after too tight dressings near the elbow, and usually in children from 3 to 12 years old. The symptoms are early onset of severe pain and swelling, simultaneous appearance of rigid contracture with paralysis, causing the characteristic claw hand. Severe cases may result from six hours of tight compression. Prophylaxis is most important: There should not be tight dressing on fractures especially near elbow; allowance should be made for traumatic reactionary swelling; there should be frequent inspection of dressings, and removal of dressings when lesions occur. Treatment is non-operative—massage, electricity, vigorous passive motions, etc.; or operative—lengthening of tendons of the shortened muscles or resection of both bones of forearm, enough to permit full extension of wrist and fingers. Damaged nerves should be properly cared for. Prognosis on the whole is unfavorable, complete cure is rare and improvement comes only after a long period of steady work.

38. **Dislocation of Ulnar Nerve.**—Cobb describes cases of recurrent dislocation of the ulnar nerve of which the total number of reported cases is now 23. Operation has every chance of effecting a cure, but should never be undertaken for the nerve dislocation alone, but only for severe and disabling symptoms. The simple operation of replacing the nerve in its groove and covering it with a flap of fibrous tissue from the triceps fracture will be sufficient. Chiseling the bone or dissecting up periosteal flaps is unnecessary.

39. **Operative Treatment of Fractures of Femoral Shaft.**—The purpose of Huntington's paper is: 1. To determine finally, if possible, what shall be regarded as a satisfactory end result in fractures of the femoral shaft. 2. To ascertain whether or not anatomic replacement and permanent fixation of fragments by operative interference, is justifiable from the standpoint of infection and of improved end-results. He discusses the stapling of fractures and arrives at the following conclusions:

1. The term "satisfactory results" is too elastic and does not conform to any standard.
2. The two-plane radiogram, when available, affords the most reliable diagnosis, and determines the plan of treatment.
3. The possibility of infection is not a prohibitive menace.
4. Operative wounds are less susceptible to infection in initiative than in late corrective procedures.
5. Approximate anatomic reposition is essential to quick repair and ideal result.
6. In oblique fractures slight over-riding is permissible.
7. In transverse fractures appreciable shortening is due to overlapping of fragments, and is incompatible with good surgery.
8. Mechanical traction during operation is indispensable.
9. Steel staples (or screws in oblique fractures), because of ease of adjustment and efficiency, have proved superior to other methods of fixation.

40. **Supracondyloid Fractures of Humerus.**—Lusk describes with numerous half-tone illustrations of cases before and after operation, the method of reduction and the mode of maintaining it.

American Medicine, New York.

August.

42 *Responsibility of the Physician for the Future of the Child with Adenoids and Impaired Hearing. L. S. Somers, Philadelphia.
43 Seborrhea: Its Relation to Alopecia and Acne. M. B. Jewett, New York.
44 Exophthalmos as a Complication of Accessory Cavity Disease. R. H. Johnston, Baltimore.
45 *General Suboxidation from Prolonged Unremitting Effort, Both Physical and Mental. H. Wakefield, New York.
46 Electric Massage of Abdomen. A. Bassler, New York.
47 *Rôle of the Physician in Producing or Maintaining the Maladies Derived from the Imagination. T. A. Williams, Washington, D. C.

42. **The Physician and Adenoids.** Somers discusses the future of the child with adenoids and impaired hearing, and holds that the responsibility of the physician is not limited to the recognition and treatment of mouth breathing and impaired hearing from adenoids in individual cases, but that it is his duty to educate those under whose care the child is placed, as to what neglect in the matter will entail.

43. **General Suboxidation.**—Wakefield refers to the injuriousness of holding the breath during continued unremitting effort and also during a strenuous effort to force the memory. It is a common fault also in other mental operations, especially in children, during engrossing attention on abstruse problems. While breathing is taught to vocal students, Wakefield knows of no systematic instruction in breathing in connection with ordinary mental and physical activities of daily life. Children would be particularly benefited by such instruction. Those engaged in office work, such as bookkeepers, bankers, amenuenses, writers, etc., are particularly prone to irregular suspended periods of breathing. He thinks that the cumulative results of habitual suspended respiration are quite as serious to the pupil as the now nearly obsolete imperfectly ventilated school. It is as important for the teaching faculty to instruct pupils in respiratory physiology as in hygiene. The immediate and ultimate sequences of habitual respiratory suspension are not unlike the effects of vitiated atmosphere: Headache, drowsiness, malaise, vertigo, anorexia, foul breath, furred tongue, nausea, vomiting, a pallid and occasionally an icteric complexion, occasionally chills or chilly sensations, and more or less pyrexia. Of the more ultimate or chronic effects may be mentioned: Anemia, irritable weakness, loss of ambition, inability to do good work, softness and flabbiness of the muscles, and—worse than all—susceptibility to the several exanthematous fevers to which children are always more prone, and which commonly run a virulent and not infrequently fatal course in these cases. Pneumonia, diphtheria, and many other fatal diseases follow such susceptibilities. Wakefield criticizes school gymnastics, also, in that they are usually deficient in exercises that bring respiratory muscles into activity. Such exercises should be practiced daily.

47. **The Physician and Imaginary Maladies.**—Williams discusses the part played, through suggestion, by the physician in the production or maintenance of traumatic neuroses. He says that the medicolegal principles regarding traumatic neurosis should not differ from the admitted one of modified responsibility toward diseased individuals. Just as a homicide is not regarded as culpable when the victim, on account of heart disease, dies from a comparatively slight blow; in the same way the susceptibility to suggestion as shown by a development of a traumatic neurosis should at least considerably attenuate any recompense which might be due under the lex talionis.

New Orleans Medical and Surgical Journal.

September.

48 Instructions Which Should Be Given a Tuberculous Patient Making a Change of Climate. R. B. Homan, El Paso, Tex.
49 *One Hundred Laparotomies Without a Death in a Country Practice. A. S. Kiblinger and E. Kiblinger, Plaucheville, La.
50 *Bright's Disease: Its Operative Treatment. W. T. Richards, New Orleans.
51 Therapeutic Uses of the X-ray. S. C. Barrow, Shreveport, La.
52 Bacteriologic Diagnosis of Diphtheria. J. J. Archinard, New Orleans.
53 *Simple Typhoid Agglutination Test. C. C. Bass, New Orleans.
54 Rapid Method of Demonstration of the Spirochaeta Pallida for Diagnosis. J. D. Wells, Boston, Mass.

49. **Laparotomy in Country Practice.** E. Kiblinger and S. Kiblinger describe a series of 100 laparotomies of all kinds, from a simple exploratory incision to the removal of large cystic tumors, in country practice and without a single death. All operations were performed at patients' homes, some out on the gallery. The homes in most instances were dirty cabins. After-treatment was carried out by old women who had no knowledge of such work, though one of the surgeons visited each patient once every twenty-four hours. In one case they had to go a mile to find a pot wherein to boil instruments. In another they were compelled to make a table out of fence posts on which to operate. The authors attribute the success of their work under such unfavorable environment to a thorough emptying of the gastrointestinal tract. For ten days before operation they give the patient aloes and salts, combined with alkalies, in small doses often, and with plenty of water, so that the patient takes from 2 to 3 quarts of water daily. Next, the patient strips and lies on the previously scrubbed floor and the neighbors lather her and scrub vigorously with a washrag and bichlorid soap. One such bath is given every day for a week. On the day of operation the patient is clean, inside and outside, and with the thorough preparation of the abdomen after she is put on the table, sepsis has never developed during convalescence. In fact, in only one case did a stitch abscess develop. That every safeguard may be observed, they always tie all large vessels twice, for, being so far away from the patient, hemorrhage would mean death. They apply the abdominal binder so securely that it is impossible for it to slip and expose the wound to the air, thus engendering infection. In giving instructions to the family before leaving, they always tell them that, if they do not follow instructions implicitly, their patient will surely die, and by this means they frighten them into obeying.

50. **Bright's Disease.**—Richards concludes his paper as follows: I think it inadvisable to operate on Bright's disease until medical measures have been given a fair trial. When symptoms of heart overtaxation begin to show themselves no time should be lost. Decapsulate at once. Movable kidney with unilateral Bright's disease is the most favorable for operation. Diffuse nephritis is very unfavorable. When the heart is bad and general anasarca is present, only temporary benefit can be hoped for. Lastly: The value of complete decapsulation of the kidneys as a therapeutic measure in Bright's disease is assured. With the results of Edebohls, Ferguson, and other surgeons, at hand, we are warranted in offering this means of assisting a class of otherwise hopeless cases.

53. **Agglutination Test.**—Bass describes a simple typhoid agglutination test, which can be made by the general practitioner without difficulty. Several large plain agar slants, from 1 to 1.5 per cent. acidity, are inoculated with at least 5 different strains of typhoid bacilli, which must have been grown in laboratory for at least six months. Incubate at 37.5 degrees C. for 24 hours. Wash off with 1 to 500 formalin solution. This is now put in a large bottle and thoroughly shaken; it is allowed to stand and settle for at least two days and the supernatant fluid is then drawn off. The number of bacilli per cubic centimeter in this is determined by the well-known technic for standardizing bacterial vaccines. It is then appropriately diluted with the formalin solution so that 1 c.c. contains 500,000,000. The emulsion is now ready for use. The test is made as follows: Put one dram of the emulsion

into a test tube. Prick the finger or ear, and allow one drop of blood to fall into a test tube. Shake and set aside for from 4 to 12 hours. This corresponds to a dilution of 1 to 50; 2 drops of blood would make a dilution of 1 to 25. One drop in 2 drams would equal 1 to 100. If the reaction is positive there will be seen in from 1 to 4 hours a flocculent precipitate settling in the tube. In from four to twelve hours this will settle to the bottom. No such precipitate occurs if reaction is negative. The reaction is perfectly easy to determine by a simple observation. It is convenient to carry a small test tube containing the proper amount of the emulsion and stoppered, when visiting suspected typhoid cases. One takes a specimen, leaves it, and reads the reaction the next visit, or one may carry it to one's office and read after the proper time has elapsed. Dried blood retains its agglutinin for many days, and if the physician has not the emulsion with him he can take a drop of blood on a piece of glass or crockery, allow it to dry and make the test at any convenient time afterward by dissolving the blood and proceeding as before described.

Northwestern Lancet, Minneapolis.

September 1.

55 *Milk. Clean or Unclean? M. H. Reynolds, St. Paul.
56 Diagnosis and Treatment of Foreign Bodies in the Eye. C. N. Spratt, Minneapolis.
57 Case of Ectopic Gestation in which was Employed a New Procedure Suitable for Cases in which the Fetus is Living. J. P. Dougherty, Wabasha, Minn.
58 Laparotomies During Pregnancy. C. J. Holman, Mankato.

55. **Milk.**—Reynolds offers a preliminary suggestion toward a revised system of milk inspection to the effect that the granting and maintenance of a license in the larger cities should depend more on laboratory examinations than at present. These examinations would cover not only butter fat by the Babcock test; chemical examination for preservative; specific gravity test, etc., as now done; but, in addition, would also include such of the following as experience might justify: bacteria count; microscopic examination for pus cells and fibrin, curd test, and perhaps chemical examination by some of the delicate bile reactions for evidence of manure contamination and similar impurities; and centrifuging with microscopic inoculation test of sediment. In other words, he would put up certain laboratory specifications to which milk must answer, and after reasonable warnings would revoke the license in case of failure to comply.

Kentucky Medical Journal, Bowling Green.

September.

59 *Management of Occiput Posterior Cases. H. E. Tuley, Louisville.
60 Delayed Union of Fractures. C. B. Johnson, Earlington.
61 Complications of Typhoid. H. L. Coke, Sutherland.
62 Pertussis. A. R. Kemptf, Ferguson.

59. **Occiput Posterior Presentations.**—Tuley analyzes thirty-eight cases, 13 of which were rotated by the fingers in the vagina and the delivery completed without assistance, and in eight cases it was necessary to use forceps to complete delivery after rotation. He describes the three methods of accomplishing rotation—by the fingers, by the hand in the vagina, and by forceps or vectis. His plea in the management of occiput posterior cases, is in all cases, but especially in delayed first stage, to make a positive diagnosis of the position of the child; if a posterior position is recognized, with the fingers still in the vagina, make an attempt at rotation of the occiput to the front, toward the side to which it already presents; if directly posterior, toward the side to which the back presents. This attempt at replacement should be between pains, the left hand being used in right occiput posterior, the right hand in left occiput posterior position. The replaced occiput should be held in its new position until a firm contraction causes further engagement. If the physician is unable to cause rotation by the fingers, the forceps should be used as a rotator, and if carefully used no harm can result.

Memphis Medical Monthly.

September.

63 Pernicious Malaria. W. H. Deaderick, Marianna, Ark.
64 *Amebiasis. J. L. Jelks, Memphis.
65 Importance of Light Percussion in Physical Diagnosis. H. W. Fontaine, Memphis.

64. **Amebiasis.**—Jelks describes the character and peculiarities of the ameba. For treatment he combines copper phenolsulphonate with the formalin solution, which, in addition to its parasitic effect, is also an astringent. He believes that an acid solution of formalin would be best in most cases, and that the ameba does not thrive in an acid medium. He has used boric acid with the formalin. He insists on two treatments daily, using from eight to sixteen quarts of the warm formalin boric solution through the recurrent tube at each seance.

Iowa Medical Journal, Des Moines.

September.

66 Materia Medica, Hygiene and State Medicine. B. L. Elker, Leon.
67 *Dietetics as a Therapeutic Measure. C. S. Chase, Iowa City.
68 What Shall We Do with the Question of Animal Tuberculosis? J. W. Kime, Fort Dodge.
69 Conditions Influencing the Production of Sanitary Milk. J. H. McNeil, Ames.
70 Necessity of a Sanitary Milk Supply. L. E. Day, Washington, D. C.
71 *Brain Tumor. J. M. Walker, Dubuque.
72 Function of the County Medical Society. N. A. York, Lisbon.
73 My Experience with Contract Practice in Germany. J. Niemack, Charles City.
74 Case of Aneurism of Abdominal Aorta. M. W. Emmett, Atlantic.

67. **Diabetics.**—Chase argues that as the observed action of drugs on inferior animals has led to rational therapeutics based on pharmaco-dynamics, so the observed action of foods on superior animals should lead to rational dietetics. He gives instances of the way that the dietetic pendulum swings strongly from one end of the arc to the other, particularly in typhoid fever. He discusses dietetics, and looks forward to the time when dietetics shall stand on an equal footing with pharmacology, and no physician's education shall be considered complete who has not mastered it.

71. **Brain Tumor.**—Walker discusses tumors of the brain, especially in relation to their localization therein, and considers the question of operative intervention. If the tumor can be located and is removable, he asserts that we may expect entire recovery; if the tumor is malignant or is non-accessible the palliative operation not only gives relief from the vomiting and headache, but in many cases prolongs life indefinitely and relieves the optic neuritis which otherwise would end in total blindness. The result of the work by Spiller, Frazier, Starr, Lezinsky, Macewen, Park and others, is so flattering that we are warranted in almost every case of suspected brain tumor in advising operation at once. Hence, the importance to the general practitioner of being able to make an early and correct diagnosis must be obvious.

Northwest Medicine, Seattle.

September.

75 *Surgery of the Thyroid with Special Reference to the Psychic Factor in Exophthalmic Goiter. G. W. Crile, Cleveland.
76 Acute Gastric Dilatation. C. A. Smith, Seattle.
77 Exploratory Incision. R. J. James, Seattle.

75. A similar article (practically identical) was published in *Annals of Surgery*, June, 1908, and abstracted in THE JOURNAL, June 27, 1908, p. 2150.

Montreal Medical Journal.

September.

78 *Three Hundred and Twenty-five Cases of Scarlet Fever. J. McCrae, Montreal.
79 *Surgical Rights of the Public. J. C. Munro, Boston.
80 Treatment of Cerebrospinal Meningitis by Flexner's Serum. F. G. Finley and F. G. White, Montreal.

78. **Scarlet Fever.**—McCrae discusses fully the mode of infection and the complicating diseases, as shown in the first series in the wards of the Alexandra Hospital, Montreal. They number 325 cases, with 23 deaths. He lays down as the important things in scarlet fever the following points: Make the diagnosis at the earliest possible moment. Look at the skin, all of it, with the patient completely stripped, if a child. Look at the throat, especially the palate, and the tongue, especially the papillæ. If you have made the diagnosis, do not later, for a moment, even mentally go back on it. Lay down the law as to treatment, twenty-one days' milk diet and twenty-one days' bed. When you are tempted to weaken or to recede from this position, just think how

when the patient dies of nephritis, they will say, "Dr. Blank was not very strict when he had scarlet fever."

79. This article appeared in the *Boston Medical and Surgical Journal*, August 20, and was abstracted in THE JOURNAL, September 5, page 864.

Therapeutic Gazette, Detroit.

September.

81 *Psychotherapy. A. L. Benedict, Buffalo, N. Y.
82 *Status of the Ocular Reaction to Tuberculin. L. F. Appleman, Philadelphia.
83 *Twelve Cases of Pertussis Treated with the Abdominal Binder. P. B. Cassidy, Philadelphia.
84 Treatment of Chronic Constipation. B. K. Ellis, Greeley, Col.
85 Remedial Measures Other Than Drugs in Cardiac Disease. H. A. Hare, Philadelphia.

81. **Psychotherapy.** Benedict, in discussing the various forms and grades of psychotherapy, insists that it is a very dangerous weapon in the hands of anyone but a conscientious, hard-headed, well-trained physician. He considers the Emmanuel Church movement especially dangerous, because of the eminent respectability and intelligence, in non-medical matters, of its advocates. He says: "We need not discuss whether the hypnotizer exercises a special extrinsic influence over the subject, or whether all hypnotic suggestion is intrinsic in the strict scientific sense. Practically, some persons can hypnotize better than others, and the victim is virtually under the control of another will." He says that the very class of cases to which religious influence and lay psychotherapy are best adapted lie dangerously close to the border of insanity, and in any large series of such cases it seems probable that the most insidious forms of insanity and those connected with sexual and criminal tendencies will occur with frequency enough to make one shudder at the possibilities.

82. **Tuberculin Ocular Reaction.**—Appleman discusses the literature of the subject and states that the results of investigations as to the value of the ocular reaction are not yet considered final, although they are in the main favorable. In this country the difficulty in securing results is in part due to the failure to obtain a tuberculin which may be considered of standard uniform strength, and until this has been done there must of necessity be more or less variability in the conclusions of various observers.

83. **Treatment of Pertussis.**—Cassidy supplements with his own experience the report of T. W. Kilmer (THE JOURNAL, Nov. 23, 1907) as to the good results of the abdominal binder. He believes it to be of very great help in pertussis, in shortening the length of time of the disease, checking the vomiting, and reducing the numbr and severity of the attacks. He believes that the earlier the binder is applied, the better; and that in infants especially the results are wonderful.

Archives of Pediatrics, New York.

September.

86 *Modern Laboratory Feeding and the Wide Range of Resources which It Provides. T. M. Rotch, Boston.
87 *Diabetes in Infants and Young Children. H. B. Wilcox, New York.
88 Rheumatic Affections in Children. F. L. Wachenheim, New York.
89 Imperforate Anus, with a Report of a Case in which the Rectum Communicated with the Prostatic Urethra. E. B. Hodge, Philadelphia.

86. Abstracted in THE JOURNAL, July 18, 1908, p. 246.

87. **Diabetes in Children.**—Wilcox emphasizes the frequency, and almost invariably fatal outcome, of diabetes in infants and young children. Because of our belief in its rarity, or our liability to omit that important part of every physical examination, the complete uranalysis, each of us may have had the care of unsuspected cases of this disease. In the light of the literature he discusses the frequency, age, sex, etiology and glucose capacity. He says: That there exists, in all these cases of infantile diabetes, a condition at birth predisposing to a breakdown in the glycogenic function is probable. It is doubtful, however, that the disease is, strictly speaking, congenital, our only definite pathologic evidence being that the changes noted in the pancreas are as often of the nature of a compensatory hypertrophy as of a structural or secretory deficiency originating in utero. He further adds: "Of more value, however, than experiments and theories which we have cited to show that the child can withstand relatively a little more sugar at one dose than the adult, that he has to do considerably more starch digesting to supply his body needs, and that for this he is equipped at birth with all the active liver cells that he is ever going to have and a bigger percentage of liver substance, is the practical experience of each one of us that overstrain of any sort is more easily produced in early life, when none of the bodily functions have the resistance to external diversion from the normal which exists at maturity. Bearing both in mind, it seems reasonable to correlate the well-known abuse by many children of all forms of sugar with the appearance of diabetes among them. The symptoms in youth offer no peculiarities. Wilcox discusses the urine and the blood, and as regards duration says that in general the younger the child the shorter the duration of the illness. The diabetic condition is often interrupted by a latent period during which there is a suspension of all active symptoms, the patient appearing to be in perfect health or suffering only from a mild nutritional disturbance. The most frequent complications are tuberculosis, boils, pruritus and gangrene. The pathologic findings in children differ in no way from those in adults.

In the treatment of diabetes the aim of the physician is: 1. To maintain the bodily nutrition at its highest level by general régime and feeding. 2. To keep the excretion of glucose in the urine as low as possible. 3. To keep the urine free from acids. For the proper care of diabetes the following are necessary: 1. The determination of the type of case with which we are dealing; that is, the inquiry into whether we are to handle simply a carbohydrate incapacity or also a deficiency in fat oxidation, as shown by acidosis. 2. The discovery of that particular form of carbohydrate which will be best borne by the patient. 3. A clear method, preferably graphic, of recording data by which exact information can be had of, and comparison made between, the following points: (a) The patient's weight. (b) The amount of urine passed in twenty-four hours, and its specific gravity. (c) The amount of sugar excretion. (d) The quantity of acids present in the urine.

The child should awake and have the first meal in bed, at a fixed time. He should remain in bed till mid-morning, and then be allowed to be up and out until the hour for the noon meal, after which he should be well wrapped and made to rest quietly in the open air for at least two hours. He may then be given mild exercise, walking or driving if in good condition, or massage if passive exercise is better borne. Supper should be not later than 6 p. m. and bed at 7. The sleeping room should be ventilated as for a tuberculosis case. As much care must be taken to guard against waste of nervous energy and overtaxation of the heat centers from over or under the clothing, and to provide proper fresh air at all times, as is used in regulating the diet. The patient should be put on a standard diet, suited to his age and condition, and as free as possible from carbohydrate. Then a supplementary diet consisting principally of that carbohydrate found to be best borne, together with the other allowable starches and sugars, should be held in reserve, from which is added more or less according to the varying carbohydrate tolerance shown. The most reliable sign that more sugar is needed is the presence of diacetic acid, as shown by the ferric chlorid reaction. If in spite of all effort, the condition of acidosis supervenes, the administration of alkalies is indicated. Sodium bicarbonate is to be given; by mouth in the usual case, intravenously in the event of coma. The amount of the drug necessary depends on the amount of the ammonia output in the urine.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

September.

90 Posterior Column Degenerations Following Injury to the Posterior Roots of the Seventh Cervical Nerves. H. W. Mitchell, Danvers, Pa.
91 *Osseous Plaques of the Pia Arachnoid and Their Relation to Pain in Acromegaly. S. Leopold, Philadelphia.

91. **Osseous Plaques and Acromegaly.**—Leopold summarizes his paper as follows:

1. Osseous plaques are frequently present in the pia arachnoid.
2. They are found in many diseases, such as uremia, tuberculosis, and retrogressive conditions.

3. Arteriosclerosis seems to be the underlying factor in their causation.
4. The presence of these plaques on the spinal pia in acromegaly does not explain the production of pain in that disease.
5. There is no definite pathology of the spinal cord in acromegaly.

Journal of Advanced Therapeutics, Rahway, N. J.

September.

92 **Indications for the Use of the Sphygmomanometer.** F. H. Humphris, Honolulu.
93 **Cancer and Its Treatment by Cataphoric Sterilization.** G. B. Massey, Philadelphia.
94 *Is Radiography in Colors Possible? J. Rudis-Jicinsky, Cedar Rapids, Ia.

94. **Radiography in Colors.**—Rudis-Jicinsky has made experiments with the Lumière autocrome plates with a view to ascertaining whether colored photography can be applied to the Roentgen picture. He describes the method used, and the results, and characterizes the procedure as simple. He says that it is to be hoped that in the near future we shall be able, with the use of oxychlorid of bismuth photographs, to show not only the size and form of the stomach, but any condition in which there is marked congestion, pus in the cavities, or some destructive process, especially in the lungs and other organs in natural colors—colors as of life, affording opportunities for the study of comparative anatomy and other scientific questions concerning human life.

Journal of the Tennessee State Medical Association, Nashville.

September.

95 **Herniotomy.** G. R. West, Chattanooga.
96 **Conservative Surgery in Crushing Injuries.** J. L. Crook, Jackson.
97 *Significance of Uterine Hemorrhage. L. E. Burch, Nashville.
98 **Purulent Ophthalmia—Pathology and Treatment.** M. M. Cullom, Nashville.
99 **Ethics.** J. M. Kennedy, Knoxville.

97. Abstracted in THE JOURNAL, May 2, 1908, p. 1453.

West Virginia Medical Journal, Wheeling.

September.

100 **Function of the Internal Secretions.** J. N. Simpson, Morgantown.
101 **Medical Profession Losing Faith in Alcohol.** A. S. Grimm, St. Mary's.
102 **Diabetes Mellitus.** A. J. Kemper, West Milford.
103 *Translocation of Testicles. W. W. Golden, Elkins.

103. Abstracted in THE JOURNAL, June 6, 1908, p. 1934.

American Practitioner and News, Louisville.

September.

104 **Corrigan's Disease.** M. St. John, Bristol, Tenn.
105 **The Ileocolic Arches.** R. Robinson, Chicago.
106 **Prophylaxis and Diet in Typhoid.** A. E. Gardner, Louisville.

Providence Medical Journal.

September.

107 **Perforation of the Cecum Following Delivery.** C. O. Cooke, Providence.

Ohio State Medical Journal, Cincinnati.

September.

108 **Certified Milk.** J. J. Thomas, Cleveland.
109 **When to Operate for Appendicitis.** E. C. Brush, Cincinnati.
110 **Venereal Prophylaxis and Functional Genitourinary Diseases.** E. O. Smith, Cincinnati.
111 **Expert Testimony and Medical Jurisprudence as Relating to the Eye, Ear, Nose and Throat.** S. N. Jones, Cincinnati.
112 **The Professional Anesthetist and Anesthesia.** M. Meizenbaum, Cleveland.
113 **History and Administration of Anesthetic Drugs.** R. A. Rice, Columbus.
114 **Cystic Tumors of the Pancreas.** J. F. Baldwin, Columbus.

Cleveland Medical Journal.

September.

115 **Ancient Surgery.** C. W. Wyroff.
116 **Two Cases of Ectopic Gestation.** H. Robb, Cleveland.
117 **Intussusception of the Jejunum.** W. E. Lower, Cleveland.
118 **Hip Disease.** H. O. Feiss, Cleveland.

Dominion Medical Monthly, Toronto.

September.

119 **Medical Inspection of Schools.** H. MacMurchy, Toronto.
120 **Medical Thoughts, Fads, Facts and Fancies.** J. S. Sprague, Stirling, Ont.
121 **Treatment for Sprained Ankle.** J. Sheahan, St. Catherines.
122 **Lateral Sinus Thrombosis and Cerebellar Abscess.** J. P. Merton, Hamilton, Ont.

Louisville Monthly Journal of Medicine and Surgery.

September.

123 **Practice of Medicine.** D. S. Wilson, Louisville.
124 **Abdominal Pregnancy.** C. W. Hibbitt, Louisville.
125 **Extracts from the War Correspondence of the Late Dr. James M. Helloway.** A. H. Rice, Louisville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

September 19.

1 *Hernia through the Semilunar Line, and Direct Inguinal Hernia. H. B. Robinson.
2 *Case of Acute Appendicitis. H. Hawkins and E. M. Corner.
3 Operation for Absence of the Rectum. W. S. McCune.
4 Perforated Gastric Ulcer; Operation 44 Hours After Perforation. Recovery. A. C. Roper.
5 *Experimental Production and Control of the Vascular Atony of Surgical Shock. P. L. Mummery and W. L. Symes.
6 *Treatment of Uterine Displacements. G. E. Herman.
7 *Influence of the Suprarenal Glands on the Bony Skeleton in Relation to Osteomalacia and Rickets. L. M. Bossi.
8 Displacement of the Ureter in Certain Pelvic Tumors. C. Lockyear.
9 Cesarean Section versus Other Methods of Delivery in Contracted Pelvis. R. Jardine.
10 Subcutaneous Symphyseotomy and Extraperitoneal Cesarean Section. Prof. Zweifel.
11 Scopolamin-Morphin Narcosis in Labor. Prof. Krönig.
12 Use of Hyoscin-Morphin Anesthesia in Natural Labor. R. C. Buist.
13 *Scopolamin-Morphin and Chloroform Anesthesia. H. Mac Naughton-Jones.
14 Dermoid Cyst of the Jejunal Mesentery. W. B. Bell and J. B. Yeoman.
15 Case of Missed Labor. A. Dempsey.
16 *Treatment of Eclampsia by Veratrum Viride. L. Manginagilli.
17 Treatment of the Habitual Drunkard (Legislative and Otherwise). T. C. Shaw.
18 The Inebriate's Acts. C. T. Scott.
19 Hospital Treatment in Incipient Insanity. B. Pierce.
20 Mental Out-Patient Department. G. E. Mould.
21 School Life from the Point of View of Psychologic Medicine. F. Warner.
22 True and Presenile Melancholia at the Female Climacteric. L. D. H. Baugh.
23 Statistical Points in the Study of the Inheritance of Insanity. W. P. Elderton.
24 *Psychology of Neurasthenia and Hysteria. A. T. Schofield.
25 Asylum Dysentery and Ulcerative Colitis. F. G. Bushnell.

1. **Hernia.**—Robinson discusses hernia through the semilunar line above the level of the inguinal canal; also direct inguinal hernia, which, though usually considered as related to the ordinary oblique hernia, is really of another type, being also a hernia in the semilunar line only below the level of the deep epigastric artery. Strictly speaking, it should be regarded as ventral rather than inguinal.

2. **Appendicitis.**—Hawkins and Corner describe a rapid case of gangrene of the appendix with a high degree of toxicity, recovery being due in the first place to the prompt removal of the appendix as early as eight hours after the acute onset. No further trouble arose from peritoneal infection, but infection of subperitoneal tissue set in (properitoneal cellulitis), which resulted in extensive sloughing of the abdominal muscles of the right side of the abdomen, a severe toxic condition, and a long illness of more than two months of a dangerous state, with a tedious convalescence. The organisms present were the colon bacillus and the *Streptococcus faecalis*. A double vaccine treatment was used successfully.

5. **Surgical Shock.**—Mummery and Symes summarize their report to the British Medical Association as follows: In fully anesthetized animals manipulations of abdominal viscera are more productive of shock than those of gross injuries. Such manipulations produce shock rapidly when they implicate the parietal peritoneum, the peritoneal ligaments, or the mesenteries. Shock is more readily produced under chloroform than under ether. In severe shock, hypodermic injections are but slowly, if at all, absorbed into the blood stream. In severe shock, intravenous injections of adrenin and of extract of the posterior lobe of the pituitary body, raise arterial pressure to a greater extent than in the normal state. A single injection of the latter influences arterial tone for over an hour without producing abnormally high arterial pressure. This influence is sufficient to enable considerable recovery from shock, and does not interfere with subsequent injection of adrenin, if that be desirable.

6. **Uterine Displacements.**—Herman thinks the following statement in harmony with experience: Keeping up the uterus by a mechanical support in the vagina, is harmless and generally effective, but there are cases in which it fails, and if the patient is to be cured she must be treated in some other

way. He then discusses the various operative measures, including the injection of the pelvic floor with paraffin. He is not favorably impressed with this last method. In nine cases out of ten the shape of the uterus is unimportant. The thing required is to support the uterus in its function of the central point of the pelvic floor. Permanent relief can be given by combining ventral fixation with colporrhaphy. The essential points in his operation are: 1, That the peritoneal covering of the uterus should be stitched to the muscles of the abdominal wall, not to the peritoneal wall; 2, the surface brought into contact should not be a large one. He points out that in 95 per cent. of the published cases there has been no difficulty in delivery in subsequent pregnancy. He thinks that to attach the uterus by a surface of an inch transversely and half an inch from before backward is enough, and that the best place to sew it to is the place opposite which it comes if pulled up in the axis of the pelvic inlet. To pull it up to the umbilicus is to put additional strain on the stitches, and to stitch the uterus close to the top of the symphysis he believes would interfere with the bladder and with delivery in case of labor. Though he thinks the dangers of ventral fixation greatly exaggerated, it should rarely be advised for women young enough to make subsequent pregnancy probable. Ventral fixation will not cure the patient unless extensive colporrhaphy is done also. In a patient in whom pregnancy is probable, who suffers from a prolapse, who does not like a support with straps outside, and yet can not retain a vaginal pessary, an extension of the peritoneum forward, by raising flaps of skin and mucous membrane but not cutting away anything, will enable the patient to retain a vaginal pessary, and yet will not, in the event of pregnancy occurring, expose her to greater risk of laceration than occurs in most primiparæ. Extirpation of the uterus has been performed and recommended as a radical treatment. If the uterus is taken out, of course it can not come down. But the vagina comes down; the patient still has a protrusion; the only difference is that at the bottom of the inverted vagina there is a scar instead of the uterus. The only effective treatment of this kind is removal of the uterus and vagina. This is a simple operation, and its immediate result is entirely satisfactory. But its applicability is limited to elderly widows.

7. **Suprarenal Gland in Osteomalacia.**—Bossi believes that in the administration of extract of suprarenal gland a method has been discovered that will abolish the Cesarean operation for osteomalacia. He also thinks there is evidence that insufficiency in the function of the suprarenal glands must be the cause, or a factor in the causation, of osteomalacia; and that the suprarenal glands exercise an important influence on the ossification of the skeleton—a fact previously unknown, but which Bossi considers he has proved by radiographs on human patients and on sheep.

13. **Scopolamin Morphin and Chloroform Anesthesia.**—MacNaughton-Jones, as a result of 28 cases of celiotomy and other operations, approves this anesthesia for the quiet and tranquil state of the patient, the quickness with which she goes under chloroform, and the satisfactory condition during operation. The postoperative results are, as a rule, better, and he has had no disagreeable postoperative effects. He quotes the opinions of his anesthetists, Dr. Dudley Buxton, Mr. Scharlieb and Mr. Bakewell, in support of his position.

16. **Eclampsia.**—Mangiagalli discusses the results of his observation in the first 100 cases of eclampsia treated with veratrum viride, from 1897 to the end of 1907, successively in the clinic of Pavia, the old maternity of Milan, and the new obstetric and gynecologic clinic of Milan. He concludes that while it is impossible to find an explanation at present of the fact, it must be affirmed that veratrum viride is efficacious in the treatment of the eclamptic convulsion, and that most probably such efficacy is in relation with its hypotensive action. He does not, however, regard veratrum viride as a remedy for the eclampsia itself, only for its most violent manifestations.

24. **Neurasthenia and Hysteria.**—Schofield regards the psychologic distinction between neurasthenia and hysteria as profound. In neurasthenia we get an exhaustion or poisoning of the higher cerebral or spinal nerve centers. In hysteria there is no question of exhaustion, but there is aberration and morbid action of that part of the unconscious mind (vis medicatrix Naturæ) which presides over the functions and nutrition of the body, and which produces in hysteria, unconsciously and against the patient's will, morbid phenomena which the mind consciously is wholly unable to produce, even if it wished—such as, for instance, reversed peristalsis, high temperature, local tumors, etc. Hysteria is thus parallel to insanity though quite distinct from it, the radical difference being that the sphere of the former is the unconscious mind and that of the latter the conscious mind.

Lancet, London.

September 19.

26 *Cerebral and Ocular Complications of Anemia and Their Probable Relationship to Thrombosis. C. O. Hawthorne.
27 *Medical Aspect of Gastroenterostomy, Based on 128 Operations at the Manchester Royal Infirmary. E. B. Leech.
28 Case of Traumatic Subdural Hematoma Trephined Three Months After Injury. G. H. Hume.
29 Case of Sleeping Sickness Treated with Atoxyl: Apparent Recovery. T. A. Johnston.
30 Unusual Type of Leukemia Complicated by Synovitis in a Youth, with Ichthyosis. R. Waterhouse.
31 Severe Vertigo and Tinnitus; Destruction of the Labyrinth: Cure. M. Yearsley.
32 Two Cases of Pneumothorax. J. P. Milton.
33 *Prevention of Deaths Under Anesthetics. F. W. Hewitt.
34 Case of Fracture of the Ribs, Rupture of the Lung, and Pneumohemothorax. M. C. DeGiarls.
35 *Pathogenesis of Tabes Dorsalis. T. A. Williams.
36 Modification of the Romanowsky Stain. F. H. Joseph.

26. **Cerebral and Ocular Complications of Anemia.**—Hawthorne suggests that not only certain acute and serious complications but also a number of comparatively minor disturbances, occasionally observed in anemic women, owe their origin to intravascular blood clotting. Probably the most frequent and obvious exhibition of thrombosis in anemia is encountered in the large veins of the lower limbs. The next situation of anemic thrombosis is the intracranial veins and sinuses. On this latter condition he remarks that, as the obstructing clot and its consequences may in a clinical sense entirely disappear, the fact of complete recovery from an acute cerebral attack can not be successfully quoted against a diagnosis of intracranial thrombosis as the cause of such an attack. He further remarks, in connection with severe or fatal cerebral attacks occurring in anemic women, that such cases may include among their symptoms the presence of double optic neuritis, and if these symptoms are due to thrombosis in the venous channels of the skull, the conclusion seems inevitable that such thrombosis is an efficient cause of double optic neuritis. He affirms, therefore, that: 1, intracranial sinus and venous thromboses are the cause of the more or less severe attacks which occasionally complicate the course of chlorosis; and, 2, that such thromboses may include among their consequences both double optic neuritis and ocular or other limited palsies. He discusses this proposition at great length. Other effects of anemic thrombosis are certain disturbances of the visual fields, retinal embolism, and lastly, as an occasional complication in anemia and possibly due to thrombosis, may be mentioned retrobulbar neuritis. He concludes his paper as follows: In the practical sphere, the suggestion that optic neuritis, ocular paralysis, hemianopsia or other abnormalities of the visual field, retinal embolism and retrobulbar neuritis, occurring in anemic patients are probably due to thrombosis, is significant, because on such interpretation any one or more of these events appearing in an individual case must be accepted as the sign of a tendency to thrombosis in an unusually marked degree, and must, therefore, claim the prompt application of the therapeutic measures which such a conclusion demands.

27. **Gastroenterostomy.**—Leech asks: Which are the cases of gastric trouble that the practitioner or physician should send to the surgeon for gastroenterostomy? He refers to suitability for operation, not to the question of how best to perform it. He has been able to trace by letters and personal visits each of the 128 cases of gastroenterostomy performed at the Manchester Royal Infirmary before the middle of 1907. Of these 128 operations 79 were for non-malignant conditions,

46 for malignant and 3 were excluded because in 2 the question of malignancy has not been settled, and in a third, in which the patient was supposed to have acute gastric trouble, the acute attack was really an incipient pneumonia. From the figures of his cases Leech draws the following conclusions: In malignant cases, any operation which has a mortality of 46 per cent. within two months, as gastroenterostomy in the present figures shows, requires justification, especially as, if successful, the pain is almost certain to recur and may be no less severe though deferred. On the other hand, in carcinoma of the pylorus, vomiting is frequently as distressing as the pain. The latter can be kept under with morphin; we have no specific drug to combat the former. Leech has no doubt that gastroenterostomy in many instances relieves the vomiting even though it does not cure the pain. Taking these points into consideration, he would recommend that this operation should not be entertained in non-obstructive growths of the stomach, and that in obstructive cases the decision should be left largely to the patient, without persuasion and with a definite statement of the risk. In early cases only, especially when there is a doubt as to the malignancy, can he recommend that operation should in any way be pressed. Some of the most successful non-malignant cases have been operated on with the idea that there was carcinoma. In non-malignant cases gastroenterostomy is an operation which may have unusually good results. Patients whose lives have been a misery to themselves and to their friends may enjoy ease which they never thought possible, and from being confirmed invalids may be able to do a full day's work. When this is the case, any operation is worth consideration, even if the risk is great. Leech discusses also which cases are mechanically suitable, and how soon in the illness the operation should be done. He has no doubt that when there is obstruction at the pylorus, due to chronic gastric ulcer, gastroenterostomy should be performed, but he does not believe that pyloric obstruction is an essential in a case in which gastroenterostomy may give relief. He therefore recommends that the operation be performed as soon as it becomes evident by repeated relapses that the ulcer will be permanent.

33. **Deaths Under Anesthesia.**—Hewitt urges that for the public protection the administration of anesthetics must be placed on a very different basis from that which at present exists. He emphasizes the urgent necessity for higher education and skill among those to whom the important duty is entrusted of maintaining adequate anesthesia for surgical operations. The first reform should be to make it a penal offense for anyone but a legally qualified medical practitioner to administer an anesthetic. The second should be to improve and extend the anesthetic departments of our hospitals by appointing experienced men of the highest professional and academic attainments to the various offices of such departments, so that all anesthetics shall be administered or supervised by such officers, and the subject be properly taught to students. The third should be to make a thorough course of instruction in anesthetics a necessary part of the medical education of every legally qualified medical practitioner, so that, before administering anesthetics on his own responsibility, he would have administered a large number under the supervision of a competent teacher. There is ample material, not only in our general but in our special hospitals, for the most thorough practical instruction of all our medical students. The fourth reform needed is the registration by all hospitals of all anesthetics administered, so that it may be possible, at all events as regards such institutions, to ascertain the death rates of the different agents employed, and to watch the effects of any reforms that may be introduced.

35. Published in the *Virginia Medical Semi-Monthly*, June 12, 1908, and abstracted in THE JOURNAL, Aug. 1, 1908, p. 440.

Medical Press and Circular London.

September 16.

37 *Direct and Internal Splintage by Operation in Fractures of the Forearm Bones. E. M. Corner.
38 Medical Inspection of Schools. H. M. Richards.
39 Action of Hemostatics in Tuberculous Hemoptysis. M. L. Gulnard.
40 Clinical Pathology of Aural Discharges. W. Wingrave.

37. **Internal Splintage.**—Corner discusses the application of internal splints to the bone, and suggests the class of cases in which this method is most likely to be required. It is of especial value in fractures of the forearm. It allows of correct union taking place between the fragments, while, with massage and movements, free mobility of the joints can be secured. Inasmuch as a man's or a woman's skill in work depends largely on the power and extent of rotatory movements of the forearm, this method, by preventing deformity, is of the utmost service. Corner reports four cases and suggests that the use of internal splintage will be particularly required in some cases for the ulnarward deformity after fracture of both bones, in some cases of the children of the poor, in some working women and skilled workers, in some cases of impacted Colles' fracture, and in some cases in which the fracture of the radius is below the insertion of the pronator radii teres muscle.

Clinical Journal, London.

September 16.

41 Gastric Ulcer. W. P. Herringham.
42 *Atheroma and Arteriosclerosis. G. Oliver.

42. **Atheroma and Arteriosclerosis.**—Oliver sums up his observations, which began in the preceding issue, with the following conclusions as to the etiologic factors of arteriosclerosis:

1. It is misleading to attempt to refer arteriosclerosis to any one cause in all cases.
2. The causes are, as a rule, multiple, though a certain cause, or more than one cause, may be predominant in individual cases.
3. The leading causes are: (a) persistent supernormal arterial pressure, however induced; and (b) toxins of various kinds, either generated within the body (endogenetic) or introduced from without (exogenetic).
4. In addition to these determining causes there are certain predisposing factors, such as heredity and trophic proclivities.

Glasgow Medical Journal.

September.

43 *Chauffeur's Fracture. Sir G. T. Beatson.
44 *Obstetric Diary of William Hunter. J. N. Stark.
45 Vascular System and the Fibromyomata. S. J. M. Cameron.
46 The Serum Treatment of Infectious Diseases in the Practice of the City of Glasgow Fever and Smallpox Hospitals. J. Brownlee.
47 Agglutination Reactions. A. Love.
48 Infant Mortality. H. E. Jones.

43. **Chauffeur's Fracture.**—Beatson describes a fracture of the lower end of the radius known as chauffeur's fracture, which, he says, happens only at the starting of a petrol motor car. He describes the mechanism of the machine and points out that to set in action the series of explosions that furnish the motor power of the car, the mechanism is first started mechanically by means of a handle attached to the crank shaft of the engine. When this handle is turned, the piston goes through all the four strokes (suction, compression, explosion and exhaust), including the ignition of the compressed, explosive mixture. This explosion takes place just as the third downward stroke is begun, with the result that after a couple or more complete revolutions of the handle the engine goes on working automatically, and the working handle is removed. It is the handle that is the active agent in causing the chauffeur's fracture, and it may do so under different conditions. In the first place, the fracture may happen at the removal of the handle, for if at this time the chauffeur is leaning too much weight on it, or is holding it with the thumb round it, he may not be able to disengage it, with the result that his hand will be carried round with the revolving handle and severely twisted backward by the rotary movement. Another time at which the fracture may occur is during the working of the handle, which is not an easy matter, especially in the upward strokes which compress the explosive mixture. Lastly, the flying back of the handle may be due to a third cause, viz., a "backfire," which means that the explosion in the cylinder has been ignited too soon. The seat of fracture is the lower end of the radius. Its line is transverse and fairly regular, and it carries off the whole articular surface of the bone. In neither of the cases under Beatson's care was the characteristic deformity that marks Colles' fracture present. A consideration of the conditions under which the accident happened shows the following common feature—they twist backward or overextend the

hand while it has a certain amount of outward rotation or ulnar deflexion. Beatson discusses the relation between this fracture and that of Colles, and considers it to be really a Colles' fracture. He proposes the reclassifying of Colles' fracture into two divisions: those with and those without the usual deformity, the latter being due to falls on the palm of the hand when it has an ulnar deflexion, and the former arising from direct falls on the carpus, the propulsive force being transmitted directly to the radius and not only causing the fracture, but afterward inducing the characteristic deformity. Beatson believes many so-called sprains of the wrist, so diagnosed because of the absence of deformity, to be really Colles' fracture. Chauffeur's fracture can be largely avoided by grasping the handle with the knuckles down and with the thumb placed over it, in which position the handle is easily released if a back-fire should occur.

44. **Diary of William Hunter.**—Stark commences the publication of a transcript of the diary written by William Hunter during his attendance at the first three accouchements of Queen Charlotte, wife of George III. Of this diary Stark remarks: "It is rarely that we have an opportunity, either of reading a medical journal of such a character, or of getting beneath the trappings and outward show of royalty—all the more interesting in this instance because, while of the olden times, it is yet comparatively near our own days—and of viewing at close quarters that artificially created product of society in its personal and domestic aspects."

Journal of Laryngology, Rhinology and Otology, London.

September.

49 Actual Results of Esophagoscopy: (1) Extraction of Several Foreign Bodies of Irregular Shape (Dental Plates); (2) Spasm of the Cardia (Cardiospasm) of Severe Nature (Diagnosis and Treatment). Dr. Gulsez.

50 Laryngostomy and Tracheolaryngostomy in Cure of Severe Chronic Stenosis of Larynx or Trachea, Especially When Cicatricial. Drs. Sargnon and Barlatier.

Presse Médicale, Paris.

September 5, XVI, No. 72, pp. 569-576.

51 *Uncontrollable Vomiting of Pregnancy. (Séméiologie des vomissements incoercibles de la grossesse.) E. Bonnaire.

September 9, No. 73, pp. 577-584.

52 Hemoglobinuric Bilious Fever and Its Treatment with *Aphloia theaformis*. Fontoynont.

53 *Hemophilic Affections of the Joints. (Hémophilie articulaire.) P. Cruet.

September 12, No. 74, pp. 585-592.

54 Torticollis from Inflammatory Retraction of the Sterno-cleidomastoid Muscle. A. Broca.

55 Paralytic Accidents During Pasteur Treatment. (Accidents paralytiques au cours du traitement antirabique.) P. Remlinger.

51. **Symptomatology of Uncontrollable Vomiting of Pregnancy.**—Bonnaire has encountered 30 cases of uncontrollable vomiting in 20,000 lying-in women in the last seven years, at the Lariboisière Maternity. He remarks that this condition seems to average about 0.1 per cent. in maternities. He gives the metabolic findings in a large number with careful study of the symptomatology. Instead of the normal average of chlorids in the urine, he found less than 1 gm. to the liter in 9 cases; between 1 and 2 gm. in 3, and a little over 2 gm. in 7. Abortion had to be induced for one patient who had only 0.12 chlorids to the liter. Out of 15 women entering with pulse 100 or above, one aborted spontaneously and 3 required interruption of the pregnancy. Constipation was the rule; one patient declared her bowels had not moved for a month. One patient was being prepared for abortion; intense jaundice was the only alarming symptom, when she became suddenly delirious and succumbed after twelve hours of this brain phase of the trouble.

53. **Hemophilic Joint Affections.**—Cruet discusses the various forms and the grave outlook both when the arthropathy is spontaneous or the result of a long walk or slight trauma, and when it follows a severe injury.

Revue de Chirurgie, Paris.

September 10, XXVIII, No. 9, pp. 341-464.

56 The So-Called Branchiogenic Multilocular Cysts of the Neck. (Les prétendus kystes branchiogènes multiloculaires du cou.) E. Estor and G. Massabuau.

57 Case of Apparently Spontaneous Gangrene of the Rectum. M. Guibé.

58 *Primary Tuberculosis in a Hernia. (Tuberculose herniaire primitive à forme sacculaire.) O. Jacob and L. Trénel.

58. **Primary Tuberculosis in Hernial Sac.**—Jacob and Trénel describe a case in a young, previously healthy, soldier with left inguinal hernia of recent date, which rapidly increased in size. The sac was resected and a small cyst was found in it, which proved to be an almost healed tuberculous process, comparable to a fibrous subpleural tubercle. He reviews the literature on the subject, having found records of ten other cases of primary tuberculosis in a hernial sac. In the case here reported the process had been entirely latent and free from pain. The only warning sign was the rapid increase of the size of the hernia. No larger than a nut at first, in four months it developed rapidly in size and gradually descended into the scrotum, but never caused pain or colic. The painful form is more common, traction from adhesions causing pain.

Semaine Médicale, Paris.

September 14, XXVIII, No. 38, pp. 445-456.

59 *Insufflation of Air in Treatment of Pleural Effusion. C. Achard.

59. **Insufflation of Air in Treatment of Pleural Effusion.**—Achard confirms the efficacy of insufflation of air as a simple, harmless means of allowing a pleural effusion to be evacuated, without danger, while it keeps up the compression of the lung which prevents injury and promotes healing. In his extensive experience it seemed to shorten the course of the pleural affection, prevent or delay recurrence, and obviate all danger from the too rapid removal of the fluid pressing on the lungs. Without this, aspiration of a pleural effusion is liable to induce cough, dyspnea and albuminous expectoration. He insufflates the air without filtering, passing it directly into the flask which has been used for aspiration and to receive the aspirated fluid. He insufflates the air with an ordinary bicycle or other vacuum pump. Passing through the flask and the evacuating tube, the air sterilizes itself, he thinks, and the insufflated air helps to expel the last traces of the effusion. The insufflation should be arrested at the slightest discomfort on the part of the patient. In one case he evacuated by this means at one sitting 4.25 liters of effusion from a tuberculous process. Dufour in another case removed 4 liters, and Vaquez 4.8 liters. The air takes the place of the heavy fluid and thus relieves the weight on the diaphragm. Acute, non-tuberculous purulent pleurisy should be treated by operative measures, and no time should be wasted on insufflation of air. But in the tuberculous and in cancerous pleurisy, it is a valuable palliative measure, as also in hydrothorax.

Berliner klinische Wochenschrift.

September 14, XLV, No. 37, pp. 1669-1708.

60 Traumatic Inflammation of Joints and Compensation for Industrial Accidents. (Die traumatische Knochengelenkentzündung in ihrer Bedeutung für das Gutachten des Unfallarztes.) König.

61 Clinical Importance of Determination of Antitrypsin in the Blood. (Klinische Bedeutung der Antitrypsinbestimmung im Blute.) v. Bergmann and K. Meyer.

62 Complement Deviation Test in Typhoid. (Klinische Verwendbarkeit der Komplementablenkungsmethode bei typhoiden Erkrankungen.) O. Bayer.

63 Special Structures in Old Pus Tubes. (Besondere Strukturen in alten Eiterröhren.) L. Pick.

64 Severe Veronal Poisoning with Glycosuria. H. Neumann.

65 Kernig's Symptom in Tetanus. M. J. Rostowzew. Commenced in No. 37.

Deutsche medizinische Wochenschrift, Berlin.

September 10, XXXIV, No. 37, pp. 1577-1616.

66 *Ideal Operation for Arterial Aneurism. Enderlen.

67 *Diagnostic Importance of and Method for Obtaining Pancreatic Secretion from the Stomach. (Gewinnung des Pankreassekretes aus dem Magen und ihre diagnostische Verwertbarkeit.) J. Lewinski.

68 *Secretion from Pancreas Fistula and Influence on It of Antidiabetic Diet. F. Kempf.

69 Lack of Connection of Congenital Deformities with Congenital Syphilis. (Zusammenhang angeborener Missbildungen mit der kongenitalen Syphilis.) E. Gräfenberg.

70 Atypical Features of the Epidemic of Measles at Vienna This Year. (Atypisches aus der diesjährigen Wiener Masernepidemie.) J. K. Friedjung.

71 *Artificially Induced Râle Sounds for Teaching Purposes. (Künstlich erzeugte Rasselgeräusche.) W. Hildebrandt.

72 Apparatus for Orthodiagraphic Transillumination. (Neuer orthodiagraphischer Durchleuchtungsapparat.) F. Bardachzi.

73 *How to Outline the Heart with Roentgen Rays. (Herzdarstellung mittels Röntgenstrahlen.) F. Davidsohn.

74 Necessity for Better Training for Anesthetists. (Bessere Ausbildung in der Narkose und Anästhesie.) H. Wohlgemuth.

66. Ideal Operation for Arterial Aneurism.—Enderlen reviews the work which has been done in this line and describes a case in which he extirpated a popliteal aneurism with circular suture of the artery and restoration of circulation. The defect measured 4 cm., and the stumps were brought together by flexing the knee. The knee was fastened, flexed in a splint and passive exercises commenced in a week. The earning capacity was restored completely. The patient, a man of 37, left the hospital free from disturbances in less than a month. There was a history of mild syphilis eighteen years before.

67. To Obtain Pancreatic Secretion from the Stomach and Its Diagnostic Importance.—Lewinski reports investigation of 29 patients to determine the presence of pancreatic secretion in the stomach content. He found it possible to detect the pancreatic secretion after the patients had taken 150 c.c. olive oil in 70 per cent. of 27 cases. When the stomach content was unusually acid, the findings were positive only when the acidity had been neutralized with an alkali. He declares that the absence of trypsin in the stomach content is a sign of insufficiency of the pancreas or of a mechanical obstacle to the passage of the pancreatic juice into the stomach. In one case of lack of pancreatic juice an obstructing stone was probable, and in another there was hour-glass stomach.

68. Treatment of Pancreatic Fistula.—Kempf shows by his experience with a clinical case that a fistula resulting from an inflamed cyst presents conditions which render the fistula refractory to the influence of dietetic measures. An antidiabetic diet promotes the healing of a traumatic fistula, but has little effect on the inflammatory type.

71. Apparatus to Induce Râles for Teaching Purposes.—Hildebrandt comments on the difficulty of teaching with direct object lessons the different kinds of râles and sounds heard in the respiratory organs. He gives an illustrated description of an apparatus from which it is possible to auscult sounds resembling the various forms of râles. It is merely a tall glass jar, in which stands a glass tube connected with a double rubber bulb, such as is used to inflate the stomach. Auscultation of the jar or of the upper bulb reveals characteristic sounds very similar to those heard in different pathologic conditions in the chest.

73. How to Outline the Heart with Roentgen Rays.—Davidsohn says that complicated apparatus is not necessary to determine the exact outlines of the heart. He suspends the tube from the ceiling by a pulley, adjusting it about 6 feet above the patient reclining on a table about a foot from the floor. He centers the rays with a pendulum through a diaphragm tube between 4 and 5 feet long. With this arrangement small photographic plates can be used, requiring only from 15 seconds to 3 minutes' exposure and 8 minutes for developing.

Medizinische Klinik, Berlin.

September 13, IV, No. 37, pp. 1393-1438.

75 *Diagnostic Importance of Extrasystolic Arrhythmia. A. v. Koranyi.
76 *Origin of Gastric Hyperacidity. (Beurtellung der Entstehung der Superazidität des Magens.) F. Fleischer and S. Möller.
77 Unilateral Paresis of Diaphragm from Total Paralysis of Plexus and Involvement of the Sympathetic. (Einseitige Zwerchfellparese.) J. Lewinski.
78 Loss of Earning Power from Chronic Chorea. (Invalidität durch Huntingtonsche Chorea.) E. Beyer.
79 Vaccination and Eczema. (Impfung und Ekzem.) P. Schenk.
80 Weighted Percussion Hammer. E. Kantorowicz.
81 Duodenal Diverticulum as Cause of General Jaundice. (Können Duodenaldivertikel eine klinische Bedeutung erlangen?) T. Rosenthal.

75. Diagnostic Significance of Extrasystolic Arrhythmia.—Koranyi reports a case, study of which allows a glimpse into the mechanism of cardiac arrhythmia. The localization of the thumping extrasystolic sound reveals which segment of the heart is functionally defective.

76. Cause of Gastric Hyperacidity.—This communication from Strauss' polyclinic discusses the various causes for hyperacidity, showing that while the theories of Rubow and Bickel may explain certain cases there are others to which they do not apply. It is evident that hyperacidity in some may be masked by a specific secretion diluting it.

Münchener medizinische Wochenschrift.

September 8, LV, No. 36, pp. 1865-1912.

82 *Neutral-Red Soup Test of Stomach Functioning. (Neue Methode zur Funktionsprüfung des Magens.) Schlaepfer.
83 *Apomorphin Poisoning and Relations Between Retching and Paralysis of the Muscles. (Schlimme Zufälle bei der Apomorphinanwendung.) E. Harnack.
84 Ocular Tuberculin Reaction. (Ophthalmoreaktion der Tuberkulose.) Wiens and Günther.
85 "Tuberculous" Changes Without Cooperation of Tubercle Bacilli. (Zur Frage der "ohne Mitwirkung von Tuberkelbazillen" erzeugten "tuberkulösen" Veränderungen.) G. Liebermeister.
86 The Tasks of Modern Orthopedics. (Aufgaben der modernen Orthopädie.) H. v. Baeyer.
87 *Screw Apparatus to Promote Healing of Fractured Patella. (Schraubvorrichtung zur Heilung des Kniescheibenbruchs.) Bettmann.
88 Mastopexy for Pendulous Breasts. Dehner.
89 *Acute Non-suppurating Thyroiditis. R. Dunger.
90 *Ophthalmic Goiter. (Zur Basedowschen Krankheit.) M. Ohlemann.
91 Units for Roentgen-Ray Dosage. (Messung und Dosierung der Röntgenstrahlen in absoluten Einheiten. Röntgenolyse.) F. Klingelfuss.

82. Neutral-Red Soup for Functional Testing of the Stomach.—Schlaepfer regards Sahli's "fat soup" test as more promising than any other means of testing the stomach functions. It has certain disadvantages, however, and he has modified the principle, using for the purpose a colored soup. The neutral red with which it is colored gives characteristic findings by its diffusion through the stomach content and the different way in which its elements take the stain. The soup is made palatable with 30 parts egg albumin; 30 parts wheat flour, and 9 parts butter, 4 parts salt and 400 parts water. The egg is not added until after the rest has been well cooked, and then 9 parts of a 0.5 per cent. solution of neutral red are stirred into it. By this method it is possible to learn from the discoloration of the urine the moment when the pylorus first opens and to estimate the motor functioning of the stomach as a whole, also and, in the simplest way, to determine the proportions between the soup and the gastric juice in the stomach content obtained with the stomach pump, thus throwing light on the secretory functioning. The combination of albumin, carbohydrate and fat in the soup supplies the necessary physiologic stimulus. The staining of the filtered gastric juice is a criterion of its peptic power, and the modification of the tint from red to yellow and the reverse is an index of the amount of acid and the presence and intensity of fermentative processes.

83. Mishaps with Apomorphin.—Harnack had an unpleasant experience in his own person with apomorphin. In order to get rid at once of a foreign body inadvertently swallowed while eating, he locked himself in his room and injected subcutaneously 10 mg. of a fresh solution of apomorphin. Vomiting occurred in a few minutes, but all the voluntary muscles became so relaxed that he fell, incapable of moving a finger. Only the respiration and consciousness persisted. After about half an hour he was able to crawl to the door and unfasten it and ring for help. He felt very weak the next day and only gradually recovered strength. By a remarkable coincidence, a French professor of medicine had had a dangerous acute apomorphin poisoning in his own person about the same time. He injected 13 mg., while in a weak state of health and, beside the weakness and indescribable distress, the respiration became irregular. A colleague gave him a second dose of apomorphin which induced vomiting, but was followed by renewed collapse for half an hour with stertorous breathing and livid pallor. Under analeptics recovery was soon complete. Harnack reviews half a dozen works on apomorphin and its effects, especially its connection with muscular paralysis, and discusses the connection betwen muscular paralysis and the vomiting act in general, as explaining seasickness and the muscular collapse from a violent blow in the stomach region. The retching and vomiting in seasickness, as in case of concussion of the brain, proceed directly from the brain as in apomorphin vomiting. Seasickness, which may also occur as carsickness, is liable to be very distressing and might even prove fatal. Harnack himself experienced ten days of persisting severe indisposition after being very seasick for only an hour and a half. With the seasickness comes a high degree of muscular weakness which may render the patient almost perfectly helpless. The muscles of speech share in this

weakness, so that the patient is almost unable to speak. It is fortunate, he says, that the respiratory muscles do not share to the same extent as the other voluntary muscles in the general weakness, for otherwise seasickness would be dangerous in still another way. He adds in conclusion that crystallized apomorphin is free from this paralyzing action on the respiration center, and is the only form in which it should be used in therapeutics.

87. **Screw Treatment of Fractured Patella.**—Bettmann gives an illustrated description of a screw contrivance with which he has successfully treated two cases of old fracture of the patella with a wide gap. A long drill is passed through each half of the patella, the drills being parallel. Each end of each drill is provided with a hole and screw thread. A long screw is then passed through the corresponding holes in the drills on each side and by turning the screws the drills are approximated and the halves of the patella are screwed firmly together.

89. **Acute Non-Suppurative Thyroiditis.**—Dunger reports seven cases observed at Dresden, during the last two years. The patients were all young women. In six cases there was considerable fever, and the affection began with a chill and pains in the neck radiating to the ear and to the back of the neck. There was stridor in two cases. In every instance there was some history of recent pleurisy, pneumonia or apical catarrh. His experience warns against internal administration of iodin as liable to induce exacerbations and recurrence. He is convinced that many cases of apparently spontaneous exophthalmic goiter were in reality secondary to some ignored thyroiditis.

90. **Medical Autoimpression of Exophthalmic Goiter.**—Ohlemann is a sufferer himself from exophthalmic goiter and discusses the disease from behind the scenes, as well as the influence of various therapeutic measures. He is convinced that some of the essential symptoms are the results of circulatory disturbances, especially pressure from the enlarging goiter on the internal jugular vein.

Therapeutische Monatshefte, Berlin.

September, XXII, No. 9, pp. 439-492.

92 *Dosage of Roentgen Rays for Various Affections. (Bestimmung der Strahlendosen welche bei den einzelnen zur Röntgenbehandlung geeigneten Erkrankungen erforderlich sind.) H. E. Schmidt.
93 *Maximal Dose of Alcohol. W. H. Jecker.
94 Importance of Minimal Values in Balneotherapy. (Bedeutung der minimalen Werte in der Balneotherapie.) Scherk.
95 *Prophylaxis of Appendicitis. (Aetiologie der Blinddarmentzündungen.) K. Witthauer.
96 Treatment of Anemia in Children. (Behandlung der Anämie im Kindesalter.) G. Hunaeus.

92. **Roentgen Dosage of Various Affections.**—Until recently Schmidt was in charge of the institute for phototherapy connected with the university at Berlin. He remarks that very few physicians have time to determine the dosage suited for various affections, although they may be experts in Roentgen diagnosis. He gives a number of rules and recommends a simple method of dosage based on the Sabouraud radiometer. After each new tube is once tested, the dosage can then be estimated without further calculations.

93. **The Maximal Dose of Alcohol.**—Becker has made an extensive study of this subject, conducting his research on persons who are used to a certain amount of alcohol daily, from which they do not vary. He could not obtain these conditions in the young, and consequently restricted his inquiry to 50 persons, all of whom were 90 or over. The sexes were about equally divided, and he devotes eleven pages to the tabulated particulars of the 50 cases. The list includes the very poor up to the very rich, most of the individuals hale and hearty for their years. The average consumption of alcohol among 41 amounted to 14.86 gm. (about half an ounce) per capita daily. The others took no alcohol. It seems evident, he says, that these people have learned in the course of their long lives to offer their stomachs only that which they know will not cause them distress. The maximal daily dose of alcohol may therefore be accepted as above half an ounce at least.

95. **Prophylaxis of Appendicitis.**—Witthauer thinks that more attention should be paid to vegetables in the diet, thorough mastication, more frequent rather than heavy meals, and faultless digestion. The digestive functions must be kept in good order by physical measures, such as massage and electricity, or with bitters, and physical exercise must not be neglected. Bacterial influences must be combated by care of the teeth and the mouth. This is especially necessary in infectious diseases, especially those with localization in the mouth and nose. It is especially important here that the bowels should be kept well open, if necessary with calomel, to which he attributes a disinfecting action. He thinks hygiene along these lines might restrict the frequency not only of appendicitis, but of the metabolic affections as well.

Therapie der Gegenwart, Berlin.

September, XLIX, No. 9, pp. 385-432.

97 *Tuberculin Treatment of Pulmonary Tuberculosis. (Tuberkulintherapie.) M. John.
98 Study of the Blood by the General Practitioner. (Blutuntersuchungen in der ärztlichen Praxis.) C. S. Engel.
99 *Treatment of Nervous Traumatic Affections. (Behandlung der nervösen Unfallkranken.) Froehlich.
100 *Descendants of Persons Who Have Died of Cancer and Phthisis. (Nachkommenschaft der an Krebs und Schwindsucht Verstorbenen.) F. v. d. Velden.
101 *Psychoses of Pregnancy. (Gravidität spsychosen.) O. O. Fellner.
102 Dangers of Repeated Injection of Large Amounts of Curative Sera. (Gefahr der Reinjektion grösserer Mengen von Heilserum.) G. Klemperer.

97. **Tuberculin Treatment.**—John devotes nine pages to tabulation of the details of 200 cases of pulmonary tuberculosis treated with tuberculin. The results were conflicting, proving negative in some of the apparently promising cases, while they were surprisingly good in others, even in some advanced cases. The dosage was very small and cautious, especially in the cases with complications.

99. **Treatment of Traumatic Nervous Affections.**—Froehlich refers especially to industrial accidents under the workmen's compensation laws. He tries to outline the course for the general practitioner called to treat a case of the kind. The main point is rather to treat the general disturbance than the special symptoms of which the patient complains. The psychic affection—which the traumatic neurosis pre-eminently is—requires systematic psychic treatment. The headache, for example, in such cases is not the result of organic changes in the brain or membranes, and it is no wonder that otherwise effectual drugs fail to produce the desired effect. And yet the tendency is to drug such patients! A particularly good method of applying faradic electricity is to have the patient hold one electrode and the physician the other, the current being applied through the moistened other hand of the physician placed on the brow of the patient. He warns that with electricity as with drugs, habit formation should be avoided. Insomnia is best combated by regulation of the diet and tepid rubbing down or packs of the trunk or calves in the evening. The severer cases of psychic depression require institutional care, and psychic pains at the point of injury are best combated by exercising in a medico-mechanical institute. The patient learns to use his limbs in spite of the pain, and finds that movements are possible which he supposed were beyond his power. Repeated examinations of the patient on behalf of the insurance company have an injurious influence, especially when contradictory reports are discussed before him. The most important point for the prognosis is to have the litigation brought to a conclusion at the earliest possible moment.

100. **The Descendants of the Cancerous and the Tuberculous.**—Velden's article is based on Riffel's tables, study of which shows anew the constitutional nature of cancer, as a person who succumbs later to cancer begets almost invariably children who are below par even when apparently normal at the time of birth. At the same time, the descendants seem to be on a higher physical level than the descendants of the tuberculous.

101. **Pregnancy Psychoses.**—Fellner has observed three cases which confirm the assumption that the psychoses in eclamptics have a more favorable prognosis than other pregnancy psychoses. The connection between the mental disturbances and the pregnancy and the evidence of a toxicosis are unmistakable. It is also remarkable that the psychosis does not

develop until after the child and the placenta have been delivered. In his three cases the psychosis developed after the eclampsia had subsided, and it persisted until a fragment of the placenta still left in the uterus had been removed, after which the psychosis immediately subsided. The fragment of placenta still attached to the maternal tissues allowed the penetration of decaying albuminoids into the blood, thus causing the toxicosis. It seems probable that puerperal psychoses, and even eclampsia, may be the result of retention of fragments of placenta. In any event, retained placental scraps should be sought in every case of psychosis in a parturient.

Wiener klinische Wochenschrift.

September 10, XXI, No. 37, pp. 1285-1316.

103 *Connection Between Phlyctenular Eye Affections and Tuberculin (Zusammenhang der exsudativen (phlyktänulären) Augenerkrankungen und der Tuberkulose.) A. Schütz and R. Videky.
104 Experiences with Cutaneous and Subcutaneous Tuberculin Reaction. Id.
105 *Urethral Tuberculin Reaction. M. Oppenheim.
106 Deviation of Complement with Tubercle Bacilli Derivatives as Antigen in Tuberculosis and Infections Diseases. A. Wolff-Eisner.
107 Significance of Binding of Complement for Theory of Action of Tuberculin. Id.
108 "Caloric Nystagmus" Test in a Case of Fistula of the Labyrinth. I. Kliproff.

103. **Phlyctenular Ocular Affections and Tuberculosis.**—Schütz and Videky have been studying the tuberculin reactions in forty-nine cases of phlyctenular eye affections. They conclude that the Pirquet cutaneous reaction is seldom dependable, while the subcutaneous reaction is sensitive and reliable. The phlyctenular eye affections are of tuberculous origin in a certain proportion of the cases, but not in all. The differentiation of the two forms is extremely important for treatment. The tuberculous form heals more readily under tuberculin and it requires different dietetic treatment. The exacerbation or renewal of the phlyctenæ may be regarded as a specific focal reaction. They tabulate the findings with the various tuberculin tests in over a hundred cases of various eye affections, the work being done in the ophthalmologic service of a Budapest hospital.

105. **Urethral Tuberculin Reaction.**—Oppenheim states that, besides the conjunctiva, the mucosa of the urethra also may present the specific reaction to instillation of tuberculin, as he shows by reports of several cases in which he applied this urethral technic. The urethral reaction is much weaker and less constant than the ocular. Slight smarting during urination, slight redness and sticking together of the lips of the orifice and a drop of a whitish secretion were the most marked evidences of a reaction which he was able to obtain. He found that the cutaneous and urethral reactions applied together paralleled each other in respect to the time when they appeared and the intensity of the reaction.

Zentralblatt für Chirurgie, Leipsic.

September 12, XXXV, No. 37, pp. 1089-1112.

109 *Fixation of the Movable Cecum to Relieve "Chronic Appendicitis." (Fixation des Coecum mobile.) Wilms.

109. **Fixation of the Movable Cecum to Relieve "Chronic Appendicitis."**—Wilms is certain that the symptoms in many cases of supposed chronic appendicitis are in reality due to gynecologic or neuralgic conditions, or to abnormal movability of the cecum. In forty cases he has combated this latter anomaly by fastening the cecum to the posterior abdominal wall. He makes a large pocket in the retroperitoneal space and pushes the unduly long and movable part of the cecum into this pocket. The corner of the peritoneum left from the triangular incision is then drawn up and fastened to the peritoneum of the anterior abdominal wall. By this method adhesions form over the surface of the cecum and hold it firm without suturing. The results have been excellent in his experience, relieving patients whose disturbances had persisted after appendicectomy.

Zentralblatt für Gynäkologie, Leipsic.

September 12, XXXII, No. 37, pp. 1201-1232.

110 *Results of Vaginal Ablation of Cancer of the Cervix. (Die Resultate der erweiterten vaginalen Totalexstirpation des Uterus durch doppelseitige Scheidenspaltung bei Collumkarzinom.) C. Staude.
111 *Differentiation of Virulent Hemolytic Streptococci. F. Fromme.

110. **The Results of Vaginal Ablation of Cancer of the Cervix.**—Staude refers in particular to what he calls the enlarged total vaginal extirpation of the uterus by bilateral incision of the vagina and perineum. He has performed this operation in 104 out of 156 cases of carcinoma of the cervix and Schauta in 258 cases. Staude's operability of 72.3 per cent. equals, he says, that of the abdominal operations. Accidental injury of the bladder or ureter occurred in 11.6 per cent., but the rectum was never injured. Recurrence has been observed in only 29 of the total of 104 cases. The main danger with this technic is the liability to phlegmon in the pelvis, resulting from the vaginoperineal incisions. This was the cause of fatal peritonitis in 9 of the 21 patients who died in consequence of the operation; in Schauta's experience it occurred in 6 of the total 28 fatal cases. The number of absolute cures according to Winter's formula was 23 per cent. of the 93 patients operated on between 1894 and 1903; 17 of these patients were in good health in March, 1908, that is, from five to twelve years after the operation. He describes his technic in detail and says that few others can show much better results than his 41.5 per cent. cured of 58 patients operated on five or more years ago; 33.3 per cent. of 10 operated on four years ago, and 43 per cent. each of 9 after a three-year interval and 10 after two years.

111. **Differentiation of Virulent Hemolytic Streptococci.**—Fromme's previous announcement in regard to the importance of hemolytic properties as an index of the virulence of the streptococci in puerperal infection has been amply confirmed by further experience. He has discovered, however, that typical hemolytic streptococci may be encountered even in normal conditions, and that this occurs in about three-eighths of all cases. He has found, nevertheless, that there is a difference in the virulence of the hemolytic streptococci. The really virulent ones are unable to proliferate in a blood clot free from serum, while the harmless hemolytic types grow freely in it. He was led to this discovery by the fact that he was never able to detect virulent hemolytic streptococci in the vagina. He discusses the various aspects of the phenomenon and describes a method with which it is possible to differentiate the highly virulent streptococci. He inoculates 1.5 c.c. of a 5 per cent. blood clot, entirely freed from serum, with one loop of a twenty-four-hour broth culture of the streptococci from the patient. After twelve hours in the incubator a blood-agar plate is inoculated with it. Highly virulent germs develop in extremely small numbers, while the slightly virulent ones grow too numerous to count.

Gazzetta degli Ospedali e delle Cliniche, Milan.

September 6, XXIX, No. 107, pp. 1129-1144.

112 *Artificial Hemolysins and Blood Production. (Emolisine artificiali ed ematopoiesi.) C. Molon and G. Tanfani.
113 The Blood in Experimental Pellagra. (Studi ematologici sulla pellagra sperimentale.) L. Savini-Lojani.
114 *Electric Accidents. (Della folgorazione da correnti elettriche.) M. Ferrari.
115 Two Cases of Primary Epithelioma of the Vulva. C. Visentini.
116 Favorable Experiences with Hyperemic Treatment in Dispensary Practice. (Alcune applicazioni ambulatorie di Stasi alla Bier.) A. Muggia.

112. **Artificial Hemolysins and Blood Production.**—This communication from Lucatello's pathologic institute at Padua describes research on the stimulating effect on the blood production of injection of foreign serum. Carnot announced two years ago that the serum from an animal, several hours after venesection, when injected into another animal stimulates the production of blood to such an extent that the number of red corpuscles nearly doubles. Not only the serum but the blood marrow seems to acquire this stimulating property after venesection. Sonneville applied these findings in the clinic, injecting anemic children with 5 or 6 c.c. of rabbit serum, drawn a few hours after venesection, repeating the injection two weeks later. The blood production in the children rapidly became normal, and similar results were obtained by Molon and Tanfani with anemic patients and healthy rabbits. They report here considerable experimental research which confirms the fact that after venesection the regenerating processes produce young blood which is more vitalized and thus richer in specific energy. They ascribe to its specific hemolytic property its

stimulating action on the blood-producing organs, when injected into another animal. Even normal serum possesses this stimulating property to some extent, but it is materially enhanced by a preceding venesection, as seems to be conclusively demonstrated by the test-tube experiments here related.

114. **Electric Injuries.**—Ferrari expatiates on the necessity for discrimination in estimating the severity of an electric injury. He describes a case in which a young electrician had a current of 7,000 volts pass through his body from the right hand to the right foot in contact with the earth. On recovering consciousness, several hours later, there was transient paresis on the left side with persisting right hemiplegia. Seven months later the right hemiplegia and paroxysmal pains on the right side, with irritability, were the main symptoms, but there was nothing to indicate organic lesions, and great improvement was obtained by neurologic measures. The current had passed through the right side, the heart and central nervous system escaping. The contact was single and instantaneous, the instinctive voluntary movements or the muscular contraction releasing the live wire. When he entered the hospital the syndrome was that which Charcot called hysteric paralysis, but Ferrari does not accept this conception, regarding the case as a traumatic neurosis remarkable for the mildness of the injury in comparison to the enormous charge.

Policlinico, Rome.

September, XV, Surgical Section, No. 9, pp. 376-424.

117 Rare Variety of Femoral Hernia. (Ernia crurale.) E. Borelli.
118 *Treatment of Varices. (Contributo clinico alla cura delle varici.) R. Pandolfini.
119 *Technic for Resection of Elbow. (Nuovo processo di resezione del gomito.) A. Isaja. Commenced in No. 8.

September, Medical Section, No. 9, pp. 385-432.

120 *Epithelioma of Liver Associated with Cirrhosis. (Neoplasie epiteliali del fegato associate a cirrosi.) F. Fulci.
121 Differentiation of Exudates and Transudates. (Diagnosi differenziale tra essudati e transudati.) G. Vincenzo. Commenced in No. 8.

118. **Treatment of Varices.**—Pandolfini reports twenty-nine cases treated by various operative measures, the result showing that ligature and resection of the saphenous vein cure in a large number of varicose lesions. It is not necessary to remove an extensive stretch of the vein. If the lesions are unusually extensive, it is better to excise the veins or make a circular incision, interrupting the course of all the superficial veins. This latter process should be the rule in case of extensive ulceration. In case of recurrence, renewed operations may be necessary, unless individual conditions contraindicate operative measures, as in a case he relates in which varices followed typhoid thrombosis seven years before.

119. **Resection of the Elbow with Retention of Function.**—Isaja reviews ten cases from the literature in which traumatic ankylosis of the elbow was treated by the interposition of a muscle flap. He then describes a case in which he modified the Helferich technic, as he shows by several illustrations. He made a large horseshoe incision to cut a flap in the aponeurosis over the olecranon, sawing off the olecranon process, leaving it still adherent to the muscle flap. After sawing off the ends of the bones and interposing the flap of aponeurosis the section of the olecranon is sutured to the dorsal aspect of the ulna, the periosteum removed for about 3 cm. and a little recess made for the purpose. The olecranon process is further fastened to the ulna by means of a nail. The head of the nail is allowed to protrude through the skin as the oval skin flap is replaced and sutured. Passive movements were commenced in a week and the twenty-fifth day the nail was removed. Four months later the results were good. The advantages of this technic are that by resecting the olecranon process and by its implantation on the ulna the muscular apparatus of the joint is left intact. The various steps of the operation are shown in illustrations. The oval incision leaves ample space for resection of the epiphysis of the humerus and bones of the forearm. It also allows the flap for interposition between the stumps to be taken from the stout aponeurosis of the brachialis anticus.

120. **Cancer of the Liver with Cirrhosis.**—Fulci reports two cases of malignant epithelioma in the liver in elderly women in which three morbid processes coexisted: the cancer, cirrhosis and suppurative angiocholitis in one, and the cancer, cirrhosis and hydatid cyst in the other. The different processes developed independently, the clinical picture in the first being dominated by the angiocholitis, and in the other by the tumefaction from the parasitic affection.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

THERAPEUTICS; ITS PRINCIPLES AND PRACTICE. By Horatio C. Wood, M.D., LL.D., Emeritus Professor of Materia Medica and Therapeutics in the University of Pennsylvania. Revised and rewritten by Horatio C. Wood, Jr., M.D., Associate Professor of Pharmacology in the University of Pennsylvania. Fourteenth Edition. Cloth. Pp. 778, with Illustrations. Price, $5.00. Philadelphia: J. B. Lippincott Co.

PATHOGENIC MICRO-ORGANISMS, Including Bacteria and Protozoa. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College. Assisted by Anna W. Williams, M.D., Pathologist to the New York Infirmary for Women and Children. Third Edition. Cloth. Pp. 642, with Illustrations. Price, $3.75. Philadelphia: Lea & Febiger, 1908.

MEANS FOR THE PROLONGATION OF LIFE. Third and Enlarged Edition of a Lecture Delivered Before the Royal College of Physicians on Dec. 3, 1903. By Sir Hermann Weber, M.D., F.R.C.P., Consulting Physician to the Mount Vernon Hospital for Consumption. Cloth. Pp. 214. Price, $1.00. London: John Bale Sons & Danielsson, Ltd., 1908.

A TEXT-BOOK OF BOTANY AND PHARMACOGNOSY. By Henry Kraemer, Ph.B., M.D., Professor of Botany and Pharmacognosy, and Director of the Microscopic Laboratory, in the Philadelphia College of Pharmacy. Third Edition. Cloth. Pp. 850, with illustrations. Price, $5.00. Philadelphia: J. B. Lippincott & Co.

A MANUAL OF CLINICAL DIAGNOSIS. By James Campbell Todd, Ph.B., M.D., Associate Professor of Pathology, Denver and Gross College of Medicine (University of Denver). Flexible Leather. Pp. 318, with illustrations. Price, $2.00. Philadelphia: W. B. Saunders Co., 1908.

DIE KUNSTLICHE ZÜCHTUNG DES KREBSERREGERS, Seine Feststellung in der Aussenwelt, und der rationelle Krebsschutz. Von Dr. Robert Behla, Geheimer Medizinalrat. Paper. Pp. 84. Price, $0.60. Berlin: Richard Schoetz.

AN ALABAMA STUDENT, and Other Biographical Essays. By William Osler, M.D., F.R.S., Regius Professor of Medicine, Oxford. Cloth. Pp. 334. Price, $2.50. New York: Oxford University Press, American Branch, 1908.

THE AGE OF MENTAL VIRILITY. By W. A. Newman Dorland. Cloth. Pp. 211. Price, $1.00. New York: The Century Co., 1908.

New Patents

Recent patents of interest to physicians:

896882. Vibratory massage device. A. H. Arnold and A. F. Furbush, Poughkeepsie, N. Y.
897050. Uterine supporter. G. Peck, Jersey City, N. J.
896704. Air-bath apparatus. F. S. Betz, Chicago.
896897. Agar-agar-cascara product and making same. K. Dieterich, Helfenberg, Germany.
897075. Hold for thermometers. L. R. Edwards, Jacksonville, Fla.
896813. Tool tray. E. Ekstrom, Cromwell, Minn.
896814. Veriscope. W. H. Ely, Middletown, Conn.
896824. Mechanical respirator. A. N. Habberley, Newton, Mass.
897131. Medicine-dropper. H. I. Owen, Fulton, Mo.
896942. Disinfecting apparatus. P. Rudisch, New York.
897170. Soda-water fountain. B. Spinelli, New York.
896959. Pasteurizing apparatus. F. Tyson, Canton, Ohio.
897810. Manufacturing instruments for separating the cuticle from callus. R. Armory, Boston.
897289. Breast-pumping machine. T. W. Howell, Mabton, Wash.
897318. Ozonizer. J. Steynis, New York, and H. Chaumat, Paris, France.
897434. Bed-pan. D. A. Waltz, Salt Lake City.
898300. Vaginal syringe. W. E. Allen, San Diego, Cal.
898035. Audiphone. C. L. Buckwalter, Loudonville, Ohio.
898311. Manufacturing new compounds of proteids with bismuth iodid. A. Busch, Brunswick, Germany.
897885. Manufacture of casein. H. V. Dunham, Bainbridge, N. Y.
897890. Invalid bed. J. Hall, North Monroe, N. H.
898379. Antisnoring device. L. F. Leibhardt, Denver.
898253. Making tartaric acid. J. McDougall, Greenwich Park, Eng.
898258. Suspensory undershirt. R. D. Peters, Knox, Ind.
898545. Apparatus for deodorizing and filtering petrol spirit. A. J. Barnes, London, Eng.
898845. Cap for atomizer bottles or the like. T. A. De Vilbiss, Toledo, Ohio.
899007. Atomizer. T. A. De Vilbiss, Toledo, Ohio.
898866. Treating substances containing crude tartar. V. J. Garin, Annemasse, and F. David, Cette, France.
898506. Apparatus for the production of ozone. J. R. Quain, London, Eng.
898942. Making aromatic carbonyl derivatives. A. Wack, Belleville N. J.
898943. Making camphor. A. Wack, Belleville, N. J.